

Exhibit 1

WHITE PAPER:

IWGACP SCIENTIFIC OPINIONS ON
TESTING METHODS FOR ASBESTOS IN
COSMETIC PRODUCTS CONTAINING
TALC^a

INTERAGENCY WORKING GROUP ON ASBESTOS IN
CONSUMER PRODUCTS (IWGACP)

^a Including talc intended for use in cosmetics

Contents

ABBREVIATIONS 2

I. EXECUTIVE SUMMARY 4

II. INTRODUCTION..... 7

III. TALC AS A RAW MATERIAL 8

IV. ASBESTOS DEFINITIONS 8

V. HEALTH EFFECTS OF ASBESTOS AND OTHER AMPHIBOLE MINERALS 9

VI. METHODS FOR CERTIFYING THAT TALC DOES NOT CONTAIN ASBESTOS 9

VII. COMPARISON OF PLM AND TEM TESTING METHODS..... 10

VIII. APPLICATION OF PUBLISHED ASBESTOS TEST METHODS TO TALC-CONTAINING
COSMETICS..... 11

IX. SAMPLE PREPARATION FOR COSMETICS CONTAINING TALC AND TALC INTENDED
FOR USE IN COSMETICS 12

X. DIMENSIONAL CRITERIA AND TERMINOLOGY FOR TABULATING ASBESTOS AND
AMPHIBOLE PARTICLES..... 12

XI. DETERMINING HABIT OF GROWTH OF AMPHIBOLE MINERALS 13

XII. IDENTIFICATION AND REPORTING OF ASBESTOS AND AMPHIBOLES IN TALC-
CONTAINING COSMETICS AND TALC INTENDED FOR USE IN COSMETICS..... 14

XIII. ISSUES RELATED TO SAMPLE QUANTITY AND ANALYTICAL SENSITIVITY 16

XIV. SCIENTIFIC OPINIONS ON TESTING APPROACH..... 17

XV. NEXT STEPS AND FUTURE RESEARCH..... 23

XVI. GLOSSARY OF TERMS 24

XVII. REFERENCES 28

ABBREVIATIONS

AHERA	Asbestos Hazard Emergency Response Act
AMA	AMA Analytical Services, Inc.
AR	Aspect Ratio
ASTM	ASTM International, formerly known as American Society for Testing and Materials
CFSAN	Center for Food Safety and Applied Nutrition
CPSC	Consumer Product Safety Commission
CTFA	Cosmetic, Toiletry, and Fragrance Association
EDS	Energy Dispersive Spectroscopy
EMP	Elongate Mineral Particle
EPA	U.S. Environmental Protection Agency
FDA	United States Food and Drug Administration
HLS	Heavy Liquid Separation
IARC	International Agency for Research on Cancer
IR	Infrared
ISO	International Organization for Standardization
IWGACP	Interagency Working Group on Asbestos in Consumer Products
NIH/NIEHS	National Institute of Health / National Institute of Environmental Health Sciences
NIOSH	National Institutes for Occupational Safety and Health
NIST	National Institute of Standards & Technology
NTP	U.S. National Toxicology Program
OSHA	Occupational Safety and Health Administration

PCM	Phase Contrast Microscopy
PLM	Polarized Light Microscopy
SAED	Selected Area Electron Diffraction Analysis
SEM	Scanning Electron Microscopy
SME	Subject Matter Experts
SVF	Synthetic Vitreous Fibers
TEM	Transmission Electron Microscopy
USGS	U.S. Geological Survey
USP	United States Pharmacopeia
WHO	World Health Organization
XRD	X-ray diffraction

I. EXECUTIVE SUMMARY

This white paper provides the scientific opinions of subject matter experts (SMEs) from an interagency working group related to testing cosmetic products containing talc and talc intended for use in cosmetics¹ for the presence of asbestos, as well as other potentially harmful amphibole particles that can affect cosmetic product safety. These opinions are intended to inform FDA's consideration of testing methods for talc-containing cosmetics and talc intended for use in cosmetics. These scientific opinions and related advice are those of the SMEs to FDA² and do not represent recommendations or policies of FDA or any other federal agency, or proposed changes to any regulations of the U.S. Government.

Talc is a hydrous magnesium silicate mineral used in a wide variety of consumer products, including cosmetics. Some talc deposits may also contain asbestos and other magnesium silicate minerals, notably members of the amphibole group. Asbestos is a term used to describe some silicate minerals that have an unusual fibrous (asbestiform) habit of crystal growth. Asbestos historical and current use in some commodities is due to its commercially useful properties that include flexibility, durability, and heat resistance. However, asbestos is a known human carcinogen,³ and its health risks are well-documented. Asbestos exposure can cause sequelae ranging from inflammation to pleural disease, lung cancers, and malignant mesothelioma.

In 1976, the cosmetics industry voluntarily implemented a protocol to test cosmetic talc for amphibole asbestos minerals using the Cosmetic, Toiletry, and Fragrance Association (CTFA) J4-1 method in response to test results indicating the presence of asbestos. Talc suppliers to the pharmaceutical industry use a similar method to certify that talc meets the United States Pharmacopeia's (USP's) requirement for "Absence of Asbestos." To date, both methods rely on screening techniques [X-ray diffraction (XRD) or infrared (IR) spectroscopy] and require optical microscopy [i.e., polarized light microscopy (PLM)] only if the screening test is positive. These two published protocols have long-recognized shortcomings in specificity and sensitivity to detect the presence of asbestos and similar mineral particles that may pose a health concern (see Appendix F). For example, recent testing of cosmetics by a private laboratory under contract with FDA⁴ using transmission electron microscopy (TEM) revealed the presence of asbestos in samples that had negative findings for the same products using PLM, highlighting the shortcomings of optical microscopy methods. Thus, the Interagency Working Group on

¹ References to testing of talc in this document are to talc intended for use in cosmetics.

² See Appendix A.

³ As classified by the International Agency for Research on Cancer (IARC), U.S. Environmental Protection Agency (EPA), and the U.S. National Toxicology Program (NTP) 14th Report on Carcinogens.

⁴ See AMA Analytical Services, Inc. (AMA) testing results at FDA's Investigation of Reports of Asbestos Contamination in Cosmetics 2017-2019 tab at <https://www.fda.gov/cosmetics/cosmetic-ingredients/talc>.

Asbestos in Consumer Products (IWGACP) advises that electron microscopy-based methods are preferred where the objective is to determine if asbestos is present.

In 2018, FDA formed an IWGACP comprised of SMEs from eight federal agencies that have expertise in asbestos-testing and/or asbestos-related issues (e.g., from a health perspective), or that regulate asbestos or consumer products⁵ that contain talc as an ingredient. The IWGACP was asked to develop a consensus document that would support the development of standardized testing methods to improve the sensitivity and consistency of analyses, and inter-laboratory concurrence when reporting asbestos and other amphibole mineral particles in talc that could potentially affect consumer product safety. The IWGACP focused on issues that have persisted for decades in asbestos testing and related terminology and definitions.

Through its deliberations, the IWGACP developed the following scientific opinions and related advice to help ensure reliable detection and comprehensive reporting of asbestos and other amphibole particles when testing cosmetic products containing talc and talc intended for use in cosmetics:

1. Use both PLM and TEM methods to identify/report, at minimum, the presence of asbestos, other amphibole minerals, and talc particles exhibiting non-platy morphology.
2. Tabulate, at minimum, all amphibole and chrysotile particles having a length ≥ 0.5 micrometer (μm) (500 nanometer (nm)) and a ratio of length to width, i.e., aspect ratio (AR), $\geq 3:1$ in talc-containing cosmetic products and talc intended for use in cosmetics, and avoid categorizing such particles as non-asbestiform when there is ambiguity as to habit of growth.
3. Scanning electron microscopy (SEM) can be used as a complementary method to TEM, but has certain limitations at this time.
4. TEM results should be reported by tabulating each particle⁶ to facilitate an estimate of the number of particles per unit mass of sample analyzed (i.e., particles/gram of talc, particles/gram cosmetic product), rather than as weight percent.
5. An adequate number of TEM images that show the morphology of representative particles in each category described in #1 and an adequate number of energy dispersive spectroscopy (EDS) spectra and selected area electron diffraction analysis (SAED) patterns to support mineral identification should be provided.

⁵ By “consumer products,” we are referring to products used by consumers, which are regulated by a variety of federal agencies. This includes, but is not limited to, “consumer products” as defined under the Consumer Product Safety Act (15 U.S.C. 2051 et seq.).

⁶ Particles of the types specified in scientific opinion 1 meeting the dimensions specified in scientific opinion 2.

6. Samples should be prepared to mitigate interference from the sample matrix using techniques similar to those used for the testing of bulk materials for asbestos.
7. Content and format of analytical reports should facilitate consistent and comprehensive reporting of particles (as described in #1 and 2), in conjunction with adequate documentation of findings.
8. Policies and procedures covering rigorous training, quality assurance, and quality control should accompany the implementation of these methods to maintain intra- and inter-laboratory consistency and to ensure laboratories are qualified and their qualifications are reviewed regularly.

II. INTRODUCTION

In the fall of 2018, FDA formed the IWGACP in response to reports of the presence of asbestos in talc-containing cosmetic products with SMEs from eight federal agencies.⁷ Since 2017, there have been several recalls of cosmetic products in the U.S.⁸ and globally (Canada, Netherlands, Taiwan).⁹ The IWGACP was asked by FDA to develop a consensus document that would support the development of standardized testing methods¹⁰ to improve the sensitivity and consistency of analyses, and inter-laboratory concurrence when reporting asbestos and other mineral particles of health concern in talc that could potentially affect consumer's health from cosmetic use. In February 2020, FDA held a public meeting¹¹ and opened a docket in order to discuss and obtain scientific information on topics related to testing methodologies, terminology, and criteria that can be applied to characterize and measure asbestos and other potentially harmful elongate mineral particles (EMPs) that may be present as contaminants in talc and cosmetic products manufactured using talc as an ingredient.¹² At that meeting, IWGACP members presented preliminary recommendations on testing methods, including criteria to be used for asbestos fiber identification and counting. The IWGACP considered the public comments in drafting this white paper, the scope of which is specific to cosmetic products containing talc as an ingredient, as well as talc intended for use in cosmetics.

⁷ FDA, National Institutes for Occupational Safety and Health (NIOSH), National Institute of Health (NIH)/ National Institute of Environmental Health Sciences (NIEHS), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), Consumer Product Safety Commission (CPSC), and U.S. Geological Survey (USGS). The participating federal agencies have expertise in asbestos-testing and/or asbestos-related issues (e.g., from a health perspective), or because they regulate some of the consumer products that contain talc as an ingredient. As a non-regulatory science agency, the USGS SME provided input on scientific aspects of asbestos mineralogy, geology, and mineral terminology that informed the IWGACP opinions, but did not participate in the development of policy recommendations. The National Institute of Standards & Technology (NIST) is no longer a member of the IWGACP because their SME retired in 2020. In November 2020, the OSHA representatives ceased active participation. See Appendix L for list of the members of the IWGACP. The use of the terms "IWGACP" or "we" refers to the consensus opinion of the working group scientists and do not necessarily reflect the opinions or policies of their agencies.

⁸ <https://www.fda.gov/cosmetics/cosmetics-recalls-alerts/fda-advises-consumers-stop-using-certain-cosmetic-products>; <https://www.fda.gov/news-events/press-announcements/statement-fda-commissioner-scott-gottlieb-md-and-susan-mayne-phd-director-center-food-safety-and>.

⁹ Canada: <https://healthycanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2019/69454r-eng.php>; Netherlands: <https://www.ilent.nl/documenten/publicaties/2018/03/28/rapportage-twee-op-asbest-geteste-producten>; Taiwan: <https://focustaiwan.tw/society/201907270005> (accessed on 11/13/20).

¹⁰ A "standardized testing method" is a published sample preparation and/or analytical methods developed by experts and arrived at by consensus.

¹¹ <https://www.fda.gov/cosmetics/cosmetics-news-events/public-meeting-testing-methods-asbestos-talc-and-cosmetic-products-containing-talc-02042020-02042020>. See <https://www.regulations.gov/docket/FDA-2020-N-0025>.

¹² <https://www.govinfo.gov/content/pkg/FR-2020-01-10/pdf/2020-00259.pdf>.

III. TALC AS A RAW MATERIAL

Talc is a hydrous magnesium silicate mineral that is used in a wide variety of consumer products, including cosmetics, conventional foods, dietary supplements, drugs, paints, ceramics, paper products, and art materials. Some types of talc deposits may also contain asbestos and other magnesium silicate minerals—notably members of the amphibole group. Chrysotile (a serpentine mineral) and several types of amphibole minerals (such as tremolite, anthophyllite, and actinolite¹³) have sometimes been found in talc-containing cosmetic products. Removal of chrysotile and amphibole minerals by purification of talc ores is extremely difficult. Thus, it is necessary to judiciously select talc deposits that do not contain asbestos¹⁴ and other amphibole mineral particles of potential health concern prior to mining talc for use in cosmetic products. In addition, appropriate testing methods are needed to monitor the mineral composition and purity of mined talc ores to ensure their suitability for use in talc-containing cosmetic products. (See *Appendices B, C and F.*)

IV. ASBESTOS DEFINITIONS

There are many definitions of “asbestos” used in the commercial, geological, and regulatory domains (Lowers and Meeker 2002). Mineralogists define “asbestos” as those silicate minerals belonging to the serpentine and amphibole groups that have an unusual fibrous (asbestiform) crystal growth habit (as opposed to non-asbestiform, alternative habits of crystal growth). As a commercial term, “asbestos” refers to the group of six minerals, defined below, which have been mined and processed due to their commercially useful properties, including flexibility, durability, and heat resistance. U.S. asbestos regulations and the test methods required to establish regulatory compliance specify each regulated type of asbestos using mineral and commercial nomenclature. U.S. regulations specify the following six minerals, which historically have been used in commerce: chrysotile (a member of the serpentine group) and five species of the amphibole mineral group, specifically asbestiform riebeckite (also known as “crocidolite”), asbestiform grunerite-cummingtonite (also known as “amosite”), tremolite asbestos, actinolite asbestos, and anthophyllite asbestos. (See *Appendices D and G.*)

There are various instructions for quantifying asbestos in federal regulations and published protocols concerned with asbestos testing (see *Appendix F.5*). After some discussion, the IWGACP members concluded that instructions for recording and quantifying asbestos during testing of cosmetic grade talc are needed.

¹³ Some third-party laboratories (not under contract to FDA) have reported findings of the amphibole minerals richterite and winchite in cosmetics to FDA. These results have not been independently verified.

¹⁴ In some talc deposits, asbestos minerals can naturally co-occur as trace constituents and/or in the rocks adjacent to the talc deposit; it is not intentionally added during processing, but is very difficult to remove. The IWGACP believes “contaminant” or “impurity” can be used to describe this presence of asbestos in a talc-containing cosmetic product or in talc intended for use in cosmetics.

The problem of inconsistent terminology has persisted since laboratories began to test for asbestos. Lowers and Meeker (2002) published a glossary bringing to light the multitude of definitions in use. Therefore, the IWGACP developed a glossary (see **Section XVI.**) of key terms that are valuable in resolving some of the issues associated with analytical characterization of “asbestos,” “asbestiform fibers,” and other mineral particles of concern based primarily on definitions that appeared in the NIOSH Current Intelligence Bulletin 62 (the “Roadmap,” 2011), ISO 10312, Campbell et al. (USBM) 1977, and the EPA (2014) assessment for Libby amphibole asbestos.

V. HEALTH EFFECTS OF ASBESTOS AND OTHER AMPHIBOLE MINERALS

Asbestos is a known human carcinogen, and its health risks are well-documented. There is general agreement among U.S. federal agencies, most developed nations, and the World Health Organization (WHO) that there is no established threshold for adverse health effects from asbestos exposure. Following exposure by inhalation or ingestion, asbestos can cause sequelae ranging from inflammation to pleural disease, lung cancer, and mesothelioma. These effects rarely occur acutely, but more often occur many months or years following exposure. Exposure to asbestos may also lead to diseases in other parts of the body that are remote from the sites of primary exposure, including cancers of the larynx, gastrointestinal tract, and ovaries. In addition, irreversible formation of scar-like tissue in the lung has been associated with exposure to biologically persistent, elongate mineral particles that can be formed in the milling process to reduce talc particle size. (See *Appendix E.*)

VI. METHODS FOR CERTIFYING THAT TALC DOES NOT CONTAIN ASBESTOS

Concern about the purity of talc used as a cosmetic raw material increased as a result of well-publicized reports in the 1960s and 1970s when numerous cosmetic products tested positive for asbestos.¹⁵ However, at that time, there were no published test methods applicable to trace levels of asbestos in talc. In 1976, in consultation with its suppliers of talc, the cosmetics industry implemented a voluntary method for asbestos-testing of talc raw materials, known as the Cosmetic, Toiletry, and Fragrance Association (CTFA) J4-1 method. This method directs manufacturers to test for asbestiform amphibole minerals and has a stated nominal limit of detection of 0.5% by weight for amphiboles using a preliminary screen by XRD. (The method does not test for chrysotile.) If the XRD test is positive for the presence of amphibole(s), then PLM is used to determine if asbestiform amphibole is present. The J4-1 method, which has been supported by industry, has not been updated since 1976. Today, talc suppliers to the pharmaceutical industry use a similar two-step method to certify that talc meets the United States Pharmacopeia’s (USP’s) requirement for “Absence of Asbestos.” The USP method allows the

¹⁵ See Cralley et al., 1968; Rohl and Langer, 1974, 1976; Paoletti et al., 1984.

testing laboratory to use XRD or infrared (IR) spectroscopy to screen for amphibole or serpentine (a possible indication of chrysotile) minerals. Optical microscopy is used to determine if asbestiform amphibole or chrysotile is present only if the XRD or IR test is positive (See *Appendix F*).

The CTFA J4-1 and USP methods remain the only published test methods for talc used in cosmetics and pharmaceuticals, respectively, despite long-recognized shortcomings in specificity and sensitivity compared with electron microscopy-based methods (Millette, 2015; Block et al. 2014). In 2010, FDA asked the USP to consider revising the current tests for asbestos in pharmaceutical talc to ensure adequate specificity (Woodcock, 2010), and, in 2014, the USP Talc Expert Panel provided recommendations toward requiring that optical microscopy be used even if XRD is negative (Block et al. 2014). In September 2020, USP issued a draft document for public comment describing round robin studies evaluating revised XRD and PLM methods (Rutstein et al. 2020). Currently, the published talc quality standards do not include TEM methods for asbestos testing for cosmetic or pharmaceutical talc, despite acknowledgement of its utility.^{16,17}

VII. COMPARISON OF PLM AND TEM TESTING METHODS

PLM and TEM can be applied to detect asbestos in talc and talc-containing cosmetic products. PLM can detect large complex asbestos structures (*i.e.*, fibers present as bundles and clusters) and is generally less time-consuming to perform than TEM. However, PLM has limited ability to resolve structures that are <5 µm in length and/or where any dimension of the particle is below approximately 0.2 µm. TEM, on the other hand, can detect these smaller, thinner particles. Thus, due to these differences in resolution and sensitivity, TEM has a limit of detection that is several orders of magnitude lower than PLM.¹⁸ Recent reports from testing of cosmetic products commissioned by FDA have corroborated the need to use TEM when PLM does not detect asbestos. For example, in 2019, tremolite and/or chrysotile asbestos was reported in nine cosmetic products analyzed by TEM; however, seven of the nine products were reported as “not detected” by PLM.¹⁹ Today, most accredited laboratories with expertise in asbestos-testing routinely perform TEM when testing talc-containing cosmetic products, and do not rely solely on PLM.²⁰

¹⁶ See <https://www.uspnf.com/notices/talc-nitr-20200731>.

¹⁷ See <https://www.astm.org/DATABASE.CART/WORKITEMS/WK30039.htm>.

¹⁸ Based on calculated analytical estimates of asbestos detected by the two methods.

¹⁹ See FDA Summary of Results from Testing of Official Samples of Talc-Containing Cosmetics for Asbestiform Fibers by AMA Laboratories During Fiscal Year 2019. Available at: <https://www.fda.gov/media/135911/download>.

²⁰ See public presentations from February 4, 2020 public meeting, <https://www.fda.gov/cosmetics/cosmetics-news-events/public-meeting-testing-methods-asbestos-talc-and-cosmetic-products-containing-talc-02042020-02042020>.

VIII. APPLICATION OF PUBLISHED ASBESTOS TEST METHODS TO TALC-CONTAINING COSMETICS

The absence of a standardized testing method for the analysis of asbestos in talc and talc-containing cosmetic products has led many analytical laboratories to combine and/or adapt published test methods developed for the analysis of asbestos in air or building materials. This could, at least in part, account for discrepancies in laboratory findings.

Microscopy analytical methods for asbestos in published standards (see *Appendix F.5*) typically contain instructions designating how to prepare samples for analysis and how to identify and quantify asbestos. Instructions for preparing bulk and air samples and quantifying asbestos vary widely among testing methods and regulations. Methods based on optical microscopy [PLM or phase contrast microscopy (PCM)] were, in part, designed to ensure interlaboratory agreement for compliance with regulatory standards. One drawback of quantifying asbestos based on optical microscopy methods is that they typically exclude reporting of particles that are shorter than 5 μm in length and/or less than approximately 0.2 μm in width.

As a technique, optical microscopy methods, such as PLM and PCM, have limitations. They are sufficient for detecting >1% by weight asbestos as an intentionally added ingredient in “bulk materials,”²¹ or to assess air quality in settings where asbestos was known to be present (e.g., mines, mills, factories, building construction, insulation, and fireproofing products used in buildings such as schools, and other settings). However, optical microscopy has much less utility when asbestos is present as a trace mineral (i.e., contaminant) such as in talc or talc-containing cosmetic products, where it may be present at several orders of magnitude less than 1% by weight. In this instance, the asbestos particles may be too small to be detected using optical microscopy as demonstrated in recent cosmetic testing conducted for FDA.²² In light of the shortcomings of PLM, the IWGACP considers electron microscopy methods – particularly TEM – to play an indispensable role in the analysis of cosmetic products containing talc and for talc intended for use in cosmetics for asbestos and other amphibole particles (as described in #1 and 2).

²¹ Bulk materials are those dry materials which are powdery, granular, or lumpy in nature. Examples include ores, refined minerals, and mill products.

²² See FDA Summary of Results from Testing of Official Samples of Talc-Containing Cosmetics for Asbestiform Fibers by AMA During Fiscal Year 2019. <https://www.fda.gov/media/135911/download> and for example, [AMA Analytical Services, Inc. Summary of Asbestos and Talc Analysis](#) (PDF - 2MB) April 30, 2019.

IX. SAMPLE PREPARATION FOR COSMETICS CONTAINING TALC AND TALC INTENDED FOR USE IN COSMETICS

The optimal analytical approach should address potential interference by sample matrices and thereby maximally ensure detection whenever asbestos is present. Historically, laboratories have used techniques described in asbestos-testing standard methods (e.g., ISO, ASTM, EPA, OSHA) to remove interfering materials, the most common of which involve heating to remove moisture and organic matter (ashing) and acid digestion to solubilize carbonates. The IWGACP agrees these techniques are appropriate for testing cosmetics, based on established understanding of the thermal and chemical properties of talc, chrysotile, and the amphibole minerals. Moreover, the IWGACP cites additional sample preparation methods that can be used to separate chrysotile and amphibole minerals from talc and talc-containing sample matrices (see *Appendix J*). Reproducible application of these sample preparation methods requires an understanding of the sources of variability followed by interlaboratory assessments to support the repeatability and reliability.

X. DIMENSIONAL CRITERIA AND TERMINOLOGY FOR TABULATING ASBESTOS AND AMPHIBOLE PARTICLES

Published methods (see *Appendix F.5*) instruct laboratories to report and quantify asbestos using criteria for particle length and ratio of length to width, i.e., aspect ratio (AR). However, only a fraction of the total population of asbestos is reported and documented. After review of recent asbestos particle population distribution data in cosmetic products, the IWGACP concluded that reporting of asbestos particles is more comprehensive if laboratories tabulate all asbestos and amphibole particles $\geq 0.5 \mu\text{m}$ in length, with an AR of $\geq 3:1$. The IWGACP initially adopted the term EMP, as defined in NIOSH Bulletin 62 (2011), to describe mineral particles exhibiting an AR of $\geq 3:1$.²³ The term EMP provides an umbrella term for amphibole particles that may pose a health risk, regardless of how they formed.²⁴ The IWGACP notes that amphibole particle populations often exhibit variation in appearance and that laboratories may describe amphibole particles using terms such as “prismatic,” “acicular,” “cleavage fragment,” and “asbestiform.” The IWGACP believes the term “EMP” could help resolve discrepancies in the reporting of amphibole particles, and most importantly, that it would ensure more inclusive reporting by laboratories.

²³ The term “EMP” had been subjected to substantial scientific debate, peer review, and public comment prior to being adopted in NIOSH Bulletin 62 (2011). The IWGACP considers “EMP” to be a scientifically-preferred term, negating the need for the creation of a new phrase or acronym to describe mineral particles with an AR of $\geq 3:1$. NIOSH defined a *countable EMP* as a particle having “(1) an aspect ratio of 3:1 or greater and (2) a length greater than 5 μm .”

²⁴ An explanation of amphibole mineral geology (formation) and the resulting variations in particle morphology is provided in Appendix D.

However, based on public comments that use of “EMP” might be overly broad,²⁵ the IWGACP focuses on reporting particle dimensions (i.e., minimum length and AR) when discussing testing.²⁶ The IWGACP endorses the use of complementary microscopy methods (PLM, TEM) to establish a comprehensive and standardized record of asbestos and amphibole mineral particles present in cosmetic products that affect product safety and could be associated with both non-cancer and cancer diseases.

XI. DETERMINING HABIT OF GROWTH OF AMPHIBOLE MINERALS

The difficulty of identifying and quantifying amphibole asbestos particles in talc is compounded by the potential presence of amphibole particles that have the same elemental composition and crystal structure as one of the asbestos minerals but may have originated from their non-asbestiform analogues. (See *Appendix D*.) The characteristic feature of an “asbestos structure” is the “bundle” consisting of multiple particles that may show definitive characteristics of asbestos particles such as splaying or longitudinal splitting at either end of the structure. However, asbestos structures are less readily identifiable after extensive processing that can result in attrition, such as milling of talc to produce cosmetics. In the milling process, non-asbestos amphibole particles in the ore can be reduced in size, resulting in particles that may look like asbestos.

EPA’s regulations promulgated under the Asbestos Hazard Emergency Response Act (AHERA)²⁷ and ISO 10312:2019 standards for TEM analysis of asbestos offer some visual aids to assist the analyst for classifying various types of asbestos structures containing one or more asbestos fibers (*Appendix F*). However, as stated in the ISO TEM test method for asbestos (ISO 10312:2019), TEM methods cannot readily discriminate between individual particles of asbestos and non-asbestos analogues of the same amphibole mineral.²⁸ As a result, disputes have often arisen between laboratories over whether amphibole particles detected by TEM are to be regarded as “asbestos” or as products of the attrition of a non-asbestiform analog. Indicative of ambiguity as to their habit of growth, amphibole particles having an $AR \geq 3:1$ viewed by TEM may appear to have blunt or sharp ends; such particles have been ascribed as being “asbestiform”

²⁵ <https://www.regulations.gov/docket/FDA-2020-N-0025>. Several comments submitted to the docket for the “Testing Methods for Asbestos in Talc and Cosmetic Products Containing Talc,” expressed concern that the term “EMP” is too broad, expands the definition of asbestos, and may have additional unintended implications when used for testing talc-containing cosmetic products.

²⁶ These exclude man-made fibers (such as synthetic vitreous fibers, SVFs) that are unlikely to be present in talc-containing cosmetic products.

²⁷ 40 CFR Part 763.

²⁸ The inability to discriminate asbestiform from elongate non-asbestiform amphibole particles is stated in the Scope Section of TEM Methods in ISO standards 10312:2019 and 13794:2019. There is no indication of consensus among published standard methods or in the peer reviewed scientific literature on optimal boundaries (i.e., length, width, aspect ratio) to apply to differentiate habit of growth.

or alternatively “non-asbestiform,” perhaps using mineralogical terms such as “bladed,” “acicular,” or the term “cleavage fragment” indicating a particle that was derived from attrition of a prismatic crystal. (See *Appendix D*.) In contrast, for chrysotile, which crystallizes as a scrolled, hollow tube as asbestos, characterizing individual fibers as “asbestiform” by TEM is not subject to the same difficulties as encountered for amphibole mineral particles.

XII. IDENTIFICATION AND REPORTING OF ASBESTOS AND AMPHIBOLES IN TALC-CONTAINING COSMETICS AND TALC INTENDED FOR USE IN COSMETICS

Generally, asbestos-testing of talc and talc-containing cosmetic products involves multiple, complementary methods of analysis, which collectively provide information regarding the following three aspects of mineral identification:

- (a) elemental composition,
- (b) crystal structure, and
- (c) morphology of minerals in either talc or a talc-containing cosmetic product.

XRD is useful to analyze bulk samples (e.g., talc); whereas microscopy methods listed below are useful to analyze individual mineral particles (e.g., amphibole and chrysotile). **Table 1** summarizes the attributes, measurements obtained and utility of each of the analytical methods the IWGACP considers relevant for the testing of a sample of talc or talc-containing cosmetic product. (See *Appendix B*.)

Table 1 – Summary of Useful Analytical Techniques and Corresponding Attributes and Measurements to Analyze Talc and/or Talc-containing Cosmetics

Technique	Attribute to Report	Measurement and Utility
XRD	Mineral (group) type (e.g., amphibole, serpentine, chlorite)	Identity and estimate of amounts of mineral types in a bulk sample (e.g., talc); appears most useful as a qualitative method to determine presence/composition of minerals and reporting estimated amounts of each mineral using terms such as “trace,” “minor,” and “major”
PLM	Particle mineral type including any applicable inference to growth habit based on morphology (e.g., tremolite asbestos, chrysotile, asbestiform winchite-richterite)	Representative images useful to identify (with greater specificity than XRD) mineral type (based on particle optical characteristics) and morphology; may be used to quantify or estimate amount of each mineral type (see “point counting” methods); particle morphology (i.e., “bundles of sticks” ²⁹) may be indicative of “asbestiform” habit; regarded to have limited or no utility for detection of chrysotile in talc or talc-containing cosmetics
TEM	Particle morphology	Representative images showing morphology (in conjunction with SAED can be diagnostic for chrysotile) accompanied by tabulations showing each mineral particle’s length and width (and calculated aspect ratio) ³⁰
TEM/EDS	Elemental composition of particles	Representative spectra and tabulations indicating which elements (e.g., Calcium (Ca), Magnesium (Mg), Silicon (Si), Iron (Fe), Oxygen (O), etc.) are present; semi-quantitative analysis of elemental composition is used in conjunction with TEM/SAED to help identify mineral type
TEM/SAED	Crystal structure of particles	Representative electron diffraction patterns showing spacing of atoms are generated; quantitation of distances between atoms and adjacent planes of atoms in crystal is used in conjunction with TEM/EDS to help identify mineral type; at least two zone axis measurements (from different angles) may be necessary to identify certain minerals
SEM	Particle morphology	Representative images and tabulations of particle length, width (aspect ratio); may provide enhanced visual detail (to supplement TEM) useful to determine if a particle is “asbestiform”
SEM/EDS	Elemental Composition of particles	Representative spectra and tabulations indicating which elements (e.g., Ca, Mg, Si, Fe, O, etc.) are present; semi-quantitative analysis of elemental composition.

XRD may be useful to characterize overall mineral composition in talc and ores that serve as a source of talc, but does not appear to be a useful method for detecting low levels of asbestos in talc and talc-containing cosmetics and does not provide individual particle analysis.

²⁹ See CTFA J4-1 for description of morphology of amphibole asbestos.

³⁰ Numerical values of particles counted and number of amphiboles and chrysotile detected should be reported.

PLM is an essential method for the detection of small mineral particles in products and can be used to discriminate minerals based on crystal structure using index of refraction liquids. PLM offers the advantage of inspecting a larger sample size than electron microscope analysis, albeit at much reduced resolution. A finding of bundles of particles by PLM indicates that, if sufficient sample is examined, individual particles will be found by TEM also; however, a negative finding by PLM cannot predict a negative finding by TEM. The IWGACP regards PLM as having substantial limitations in its ability to detect, resolve, and identify individual particles of asbestos and other amphibole minerals that are $\leq 5 \mu\text{m}$ in length with $\text{AR} \geq 3:1$.

TEM should be used to analyze individual particle elemental composition with Energy Dispersive Spectroscopy (EDS) and crystal structure with Selected Area Electron Diffraction Analysis (SAED). TEM is able to resolve particles having length $\geq 0.5 \mu\text{m}$ and $\text{AR} \geq 3:1$. As noted earlier, EPA's regulations promulgated under AHERA and ISO 10312:2019 standards for TEM analysis of asbestos offer some visual aids to assist the analyst in classifying the various types of asbestos structures (*Appendix F, Figure F.5*).

SEM has the advantages of scanning large areas of sample at low- to high-magnification, providing surface and three-dimensional imaging. SEM can be used to obtain semi-quantitative elemental analysis of individual particles using EDS and also supports electron-microprobe analysis for elemental analysis. SEM does not currently support SAED analysis of individual particles, which is critical for crystal structure determination, although there is recent research into determination of crystal structure using electron backscatter diffraction cameras. For these reasons, the IWGACP acknowledges that SEM may be useful as an adjunct to TEM (**Figure 1**).

XIII. ISSUES RELATED TO SAMPLE QUANTITY AND ANALYTICAL SENSITIVITY

The amount of sample prepared for analytical determinations by PLM, XRD, and TEM should be appropriate for each of these respective methodologies and be representative of the talc-containing cosmetic product.

Several factors affect the limit of detection for asbestos testing, including analytical method (XRD, PLM, TEM, SEM), sample preparation (including removal of interfering materials, concentration methods like heavy liquid separation [HLS]; see *Appendices I and J*), and the number of electron microscopy grid openings counted. Counting a larger number of grid openings results in greater test sensitivity, i.e., a lower detection limit. The limit of detection should be as low as possible to ensure that any asbestos particles present are detected.

Current testing by AMA³¹ on behalf of FDA using PLM has a limit of detection based on a single structure of asbestos on the order of 0.1-0.2% by weight. From this testing, it appears that

³¹ AMA Analytical Services, Inc. in Lanham, MD, see for example, limit of detection at <https://www.fda.gov/media/135901/download>.

PLM may only be useful for detecting structures consisting of bundles of individual particles. For TEM analysis used by AMA, the limit of detection for asbestos in talc-containing cosmetics is on the order of approximately 10,000,000 particles/gram based on a single particle having a length of 0.5 microns and a width of 0.04 microns (approximately four orders of magnitude lower than the detection limit for PLM).

The IWGACP believes that these matters warrant further discussion. Published methods to test for asbestos by TEM provide general guidelines for particle counting that seem to be based on laboratory efficiency and time management. Many laboratories, including AMA, routinely view 20 grid openings and count up to 100 mineral particles (maximum) as a stopping point for TEM analysis.

XIV. SCIENTIFIC OPINIONS ON TESTING APPROACH

To have a comprehensive assessment, the IWGACP advises that the development of a standardized approach should include both optical and electron microscopy, with the reporting of all asbestos and other amphibole mineral particles meeting dimensional criteria detected in talc and talc-containing cosmetic products. Product sampling and sample preparation should be consistent with established methods (e.g., EPA, OSHA, NIOSH, ASTM, ISO) for the reliable and reproducible detection of asbestos in products. The IWGACP considers it important that written protocols specify appropriate instruments, methods, and reporting criteria. Such an approach for inclusive reporting will enhance transparency and help to provide a cumulative record of mineral particles, thereby facilitating more well-conceived health-based decisions about cosmetic product safety. The approach ensures reporting of mineral particles that can be inhaled into the lungs and potentially be harmful from use of a cosmetic product, regardless of how they formed (i.e., in the earth or during cosmetic raw material milling). The health effects, although discussed generally to support the particle characteristics that laboratories report, were not the primary focus of this work group's activities.

In conclusion, the IWGACP provides the following scientific opinions and related advice with respect to testing talc intended for use in cosmetics and cosmetics that contain talc as an ingredient:

- 1) Use both PLM and TEM³² methods to identify/report at minimum,³³ the presence of the following types of particles:
 - a. amphibole minerals defined as asbestos in federal regulations³⁴
 - b. other amphibole minerals³⁵
 - c. chrysotile
 - d. particles that contain talc and an amphibole³⁶
 - e. talc particles exhibiting non-platy morphology³⁷ (e.g., particles appearing as curved plates, or ribbons)

Rationale: Chrysotile, which can be identified using TEM based on its scrolled, hollow structure, should be reported separately from amphiboles. Amphibole minerals can be subcategorized based on chemistry and crystal structure as, e.g., tremolite, anthophyllite, actinolite, winchite, richterite, or “other.”

Talc may exhibit a non-platy morphology (see *Appendix C*). Certain non-platy particles of talc, having mixed compositions (see 1.d) and “fibrous” morphology have been reported in the literature. The IWGACP advises reporting talc particles exhibiting non-platy morphology,³⁸ which would include “fibrous talc,” under categories described in 1.d and 1.e. Specifically, laboratory bench sheets should record non-platy talc particles, such as those with unusual particle shapes or compositions inconsistent with “platy talc.” Additionally, the IWGACP advises using dual zone-axis SAED to avoid potential mischaracterization of non-platy talc particles as amphibole particles.

³² PLM identifies particles based on optical properties. See, e.g., Mineral Database in Dyar and Gunter, “Mineralogy and Optical Mineralogy.” PLM should follow existing guidelines, for example OSHA Method ID-191 specifies 160-400x. TEM identifies particles by comparison with chemical (EDS) and crystallographic (SAED) properties exhibited by reference materials.

³³ Laboratories may identify additional minerals, which include common accessory and serpentine minerals in talc (see Appendix C on talc geology and description of talc); the IWGACP considers it important that laboratory reports contain a description and identification of mineral particles.

³⁴ The five amphiboles that are defined as asbestos are: asbestiform riebeckite (crocidolite), asbestiform grunerite-cummingtonite (amosite), tremolite asbestos, actinolite asbestos, and anthophyllite asbestos. See definitions in [40 CFR § 763.83 and 763.163; 29 CFR § 1910.1001\(b\)](#).

³⁵ Other amphibole species cited in mineralogical references, such as Deer, Howie, and Zussman <https://www.minersoc.org/DHZ.html>, IMA (<https://www.ima-mineralogy.org/Minlist.htm>), or Hawthorne and Oberti, 2007.

³⁶ Various terms (e.g., intergrowth, intermediate talc fiber, transitional fiber, talcbole, and biopyribole) have been used to describe particles composed of talc and amphibole, in various proportions. Such particles are not definable as a distinct mineral.

³⁷ This category excludes platy talc particles viewed perpendicular to their narrowest dimension.

³⁸ Talc morphology is described as platy or lamellar (see e.g., Fiume, et al., 2015; and Campbell et al. 1977, Figure 21). Non-platy talc particles exclude platy talc particles viewed perpendicular to their narrowest dimension.

- 2) Tabulate, at minimum, all amphibole and chrysotile particles (see 1a, 1b, 1c, and 1d) having a length $\geq 0.5 \mu\text{m}$ (500 nm) and an AR $\geq 3:1$ by indicating respective length, width, and mineral type³⁹ in talc and talc-containing cosmetic products, and avoid categorizing such particles as non-asbestiform when there is ambiguity as to habit of growth (e.g., whether the particle is asbestos or the result of attrition of a non-asbestiform amphibole).

Rationale: The AR $\geq 3:1$ is consistent with the NIOSH Bulletin 62 (2011) and the current regulations⁴⁰ for counting asbestos by light microscopy by OSHA Method ID-191. Reporting of particles $\geq 0.5 \mu\text{m}$ in length is consistent with the rules for identification and counting established by the global standard for TEM sampling and analysis, ISO 10312:2019,⁴¹ and by the 1987 Federal AHERA standards⁴² for protecting children from asbestos in public and private elementary and secondary school buildings. Many studies indicate that asbestos and other mineral particles $< 5 \mu\text{m}$ in length could pose a health concern (see *Appendix E*). Reporting such particles can reduce interlaboratory variation associated with ambiguity in determining the habit of growth of amphibole minerals and reduce the need for laboratory analysts to apply subjective criteria for such characterization. This approach ensures the size range of mineral particles suspected of contributing to pleural disease and cancer are reported consistently and objectively.

The IWGACP acknowledges that differential counting for the purpose of classifying amphibole mineral particles into asbestiform and non-asbestiform types using TEM images⁴³ is often difficult (and is inconsistently applied). The IWGACP advises against categorizing particles using terms such as “cleavage fragment,” “bladed,” or “acicular” to imply these are not asbestiform when there is ambiguity as to a particle’s habit of growth. In addition, the IWGACP advises careful use of the term “fiber” because it is defined as a type of asbestos structure in various asbestos testing standards and may misrepresent a particle as an “asbestos fiber.”

The IWGACP considered whether a criterion for particle width could be established to distinguish asbestiform and non-asbestiform amphibole mineral populations. However, the

³⁹ Laboratories should at least report whether each particle is chrysotile or amphibole, and subcategorize amphibole particles as tremolite, anthophyllite, actinolite, winchite and richterite, or other. Testing laboratories should identify minerals using naming conventions from authoritative references. The term amphibole may be used when an amphibole mineral particle’s identity is ambiguous. This would exclude man-made fibers (such as synthetic vitreous fibers, SVFs), that are unlikely to be present in talc-containing cosmetic products.

⁴⁰ [29 CFR § 1910.1001\(b\)](#).

⁴¹ <https://www.iso.org/standard/75577.html>.

⁴² 40 CFR Part 763.

⁴³ See ISO 10312:2019 Scope section.

IWGACP did not arrive at a unanimous conclusion regarding the utility of grouping of particles by width.

- 3) Use a combination of PLM with dispersion staining and TEM⁴⁴ with EDS and SAED to achieve the sensitivity and specificity to detect and identify mineral particles as described in # 1 and 2 above (see **Figure 1**).

Rationale: This approach will maximize the likelihood of detecting pertinent particles in different size ranges and ensuring interlaboratory agreement on identity of the mineral types when the objective is to detect the presence of asbestos and/or amphibole particles in talc or a talc-containing cosmetic product. The IWGACP advises using TEM even if the findings of PLM are negative, which is consistent with the opinion of many scientific experts (Rohl and Langer, 1974; Millette, 2015; Block et al. 2014). The IWGACP advises using TEM at nominally 20,000x magnification, with EDS and SAED analyses to reliably detect and identify chrysotile and amphibole minerals, including particles too narrow (<0.2 μm wide) to be resolved by PLM. See **Figure 1**. SEM could be useful as a complementary method but has shortcomings due to its inability to obtain diagnostic electron diffraction patterns or observe the inner hollow structure of chrysotile.

- 4) TEM results should be reported by tabulating each particle⁴⁵ to facilitate an estimate of the number of particles per unit mass of sample analyzed (i.e., particles/gram of talc, particles/gram cosmetic product), rather than as weight percent.⁴⁶
- 5) An adequate number of TEM images that show the morphology of representative particles in each category (as described in # 1), an adequate number of EDS spectra and SAED patterns to support mineral identification, and descriptions of each particle using the terminology included, for example, EPA's regulations promulgated under AHERA and Annex C of ISO 10312:2019, should be provided (see **Appendix F**).

⁴⁴ Unless the sample is rejected due to prior detection of asbestos with XRD or PLM; see **Figure 1**. The TEM should be capable of accelerating electrons with 100-120 kV for penetration of all possible asbestos and amphibole particles, and an EDS analysis that can detect and quantify sodium (Na). TEM must produce accelerated electrons with enough energy to penetrate the particle object and produce diffracted electrons. The accumulation of X-rays for EDS should be sufficient for elemental identification and rapid enough to avoid loss of cations (e.g., Na^+) and change or loss of structure.

⁴⁵ Particles of the types specified in # 1 meeting the dimensions specified in # 2.

⁴⁶ The IWGACP concludes that reporting as weight percent can be misleading, especially for TEM analysis of talc-containing cosmetics where widths of particles can vary by well over an order of magnitude. Also, weight percent does not necessarily correlate with the number of particles, because one large particle could dominate the weight percent value.

- 6) Samples should be prepared to mitigate interference from the sample matrix using techniques similar to those used for the testing of bulk materials for asbestos (see section XIII).
- 7) The content and format of analytical reports should facilitate consistent and comprehensive reporting of particles (as described in # 1 and 2), in conjunction with adequate documentation of findings⁴⁷ (see *Appendix K*).
- 8) Policies and procedures covering rigorous training, quality assurance, and quality control accompany the implementation of these methods to maintain intra- and inter-laboratory consistency and to ensure laboratories are qualified and their qualifications are reviewed regularly (timeframe depends on organization) (see *Appendix H*).

An analytical approach that integrates the methods discussed in this white paper is shown below in **Figure 1**.

⁴⁷ Considerations of content and preferred format for laboratory reports are described in Appendix K.

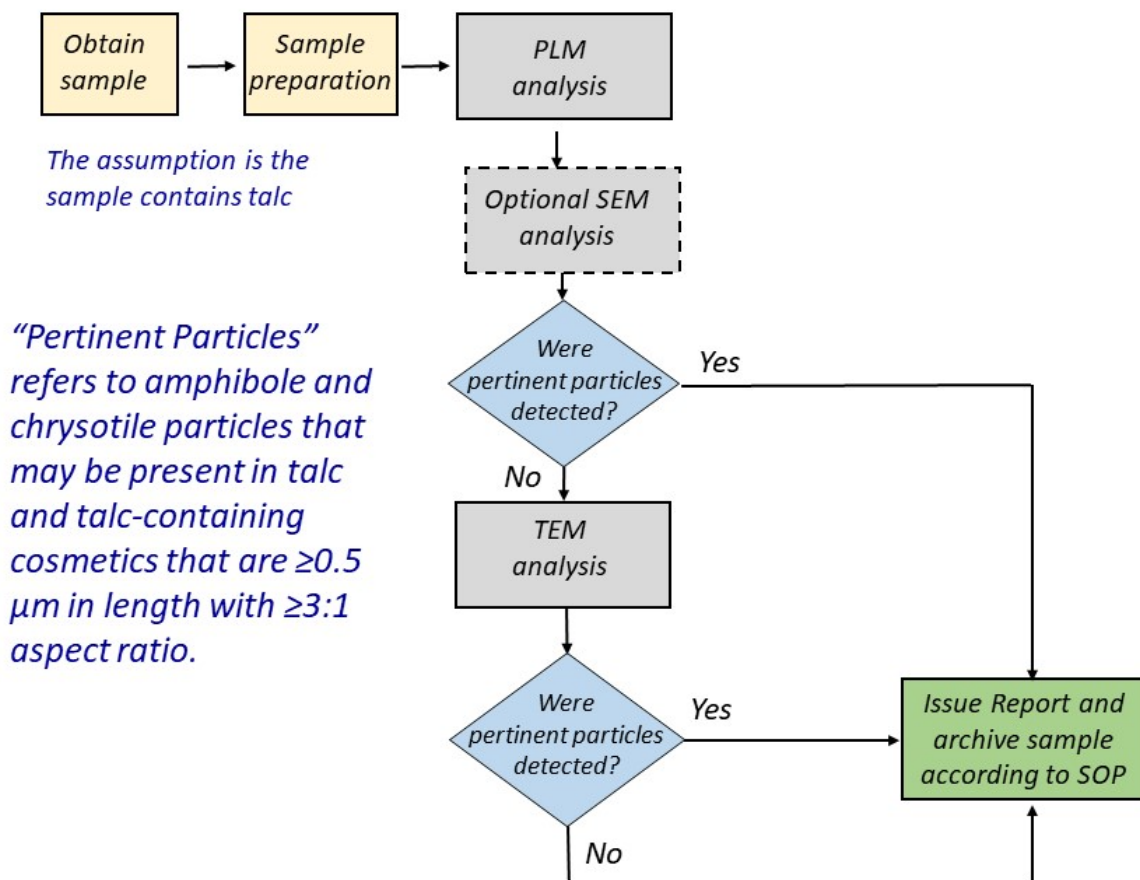


FIGURE 1. Integrated approach to analysis of talc and talc-containing cosmetics for the presence of asbestos and other mineral particles. “Pertinent particles” are defined as any amphibole or chrysotile particle with a length ≥ 0.5 μm and a minimum AR of 3:1. The **SAMPLE** would include talc or talc-containing cosmetic products. **Sample Preparation** is any preparation (e.g., mixing for homogeneity, removal of moisture, removal of organic material, concentration of mineral particles from the sample) of a representative sample. This process may be different for talc or talc-containing cosmetics. If amphiboles or chrysotile are present in the sample using **PLM**, the analyst should conclude the sample contains these particles (“Yes”) and report the observation (record data). No further analysis may be required. If PLM results are negative (“No”), electron microscopy *should be* performed. The sample may be analyzed by **SEM** (optional) but *should be* analyzed by **TEM** to achieve the analysis requirements to measure and identify amphiboles and chrysotile at ≥ 0.5 μm length with AR $\geq 3:1$. The analyst is expected to report the quantification and mineral identification of amphiboles, chrysotile, and other mineral particles meeting the criteria of ≥ 0.5 μm length with AR $\geq 3:1$.

XV. NEXT STEPS AND FUTURE RESEARCH

The IWGACP has identified the following as areas for directing research efforts to promote reliability, sensitivity, and interlaboratory agreement of the analytical methods for asbestos and other mineral particles of potential health concern in talc-containing cosmetic products and talc intended for use in cosmetics:

1. Research and development of sampling methods specific for talc and talc-containing cosmetics that maximize sample representativeness and minimize error, false positives, and false negatives for amphibole and chrysotile particles.
2. Research and development of methods for talc and talc-containing cosmetic sample preparation, in particular, treatments (e.g., concentration methods) that improve sensitivity while leaving talc and asbestos minerals unchanged with respect to identity and dimensions.
3. Studies of protocols developed based on above numbers 1 and 2 to establish interlaboratory agreement.
4. Development and qualification of reference materials that can be used to assess laboratory and analyst proficiency, increase inter-laboratory concurrence, minimize reporting errors, and potentially provide for improved reliability of quantitative analysis. Development of appropriate talc-specific reference standards containing known concentrations of characteristic amphibole and chrysotile mineral particles found in talc (of known size distributions) would be ideal for method development and quantitation.

The IWGACP recommends that FDA participate in efforts to address the identified research needs, including collaborating with standard development organizations (e.g., USP, ASTM, ISO) when possible.

XVI. GLOSSARY OF TERMS

Actinolite: Actinolite is an amphibole silicate mineral with the chemical formula $\square\text{Ca}_2(\text{Mg}_{4.5-2.5}\text{Fe}^{2+}_{0.5-2.5})\text{Si}_8\text{O}_{22}(\text{OH})_2$. Actinolite is an intermediate member in a solid-solution series between tremolite, $\square\text{Ca}_2(\text{Mg}_{5.0-4.5}\text{Fe}^{2+}_{0.0-0.5})\text{Si}_8\text{O}_{22}(\text{OH})_2$, and iron-rich ferro-actinolite, $\square\text{Ca}_2(\text{Mg}_{2.5-0.0}\text{Fe}^{2+}_{2.5-5.0})\text{Si}_8\text{O}_{22}(\text{OH})_2$. The asbestiform variety is referred to as actinolite (International Mineralogical Assoc., <https://ima-mineralogy.org/Minlist.htm>; some information adapted from Handbook of Mineralogy and www.mindat.org; last accessed on 26 Oct 2020; see <http://www.handbookofmineralogy.org/pdfs/actinolite.pdf> for more information).

(\square is a site vacancy in the crystal structure; International Mineralogical Association, <https://ima-mineralogy.org/Minlist.htm>)

Amosite: Amosite is an acronym for Asbestos Mines of South Africa, a trade name for the commercial amphibole asbestos belonging to the cummingtonite-grunerite solid solution series, commonly from South Africa.

Amphibole: A group of double-chain silicate (i.e., inosilicate) minerals having the general chemical formula $\text{AX}_2\text{Z}_5((\text{Si},\text{Al},\text{Ti})_8\text{O}_{22})(\text{OH},\text{F},\text{Cl},\text{O})_2$ due to possible variations in atomic substituents at positions in the crystal. Some minerals in this group can occur in non-fibrous and fibrous varieties. (See <https://www.mindat.org/min-207.html>; last accessed on January 5, 2021.)

Anthophyllite: An amphibole mineral with the chemical formula $\square\text{Mg}_2\text{Mg}_5\text{Si}_8\text{O}_{22}(\text{OH})_2$ [\square is a site vacancy in the crystal structure; iron commonly substitutes for some magnesium in the mineral]. The asbestiform variety of this mineral is referred to as anthophyllite asbestos (International Mineralogical Assoc., <https://ima-mineralogy.org/Minlist.htm>; some information adapted from Handbook of Mineralogy and www.mindat.org; last accessed on October 26, 2020; see <http://www.handbookofmineralogy.org/pdfs/anthophyllite.pdf> for more information).

Asbestiform: A specific variety of a mineral or type of mineral fibrosity, associated with a unique fibrous habit of crystal growth, in which the fibers are long and thin and possess high tensile strength and flexibility. This unique habit of growth is observed in fibrous serpentine (chrysotile) and certain fibrous amphibole minerals (EPA, 2014a) (Campbell, 1997).

Asbestos (mineralogical/commercial): A group of fibrous silicate minerals that occur in an asbestiform habit of growth in which the bulk mineral readily separates into long, thin, strong fibers. These minerals are also heat resistant and chemically inert, are electrical insulators, and therefore are suitable for fabricating incombustible, nonconducting, or chemically resistant materials (EPA, 2014a).

Asbestos (regulatory): Asbestos means the asbestiform varieties of chrysotile (serpentine); crocidolite (riebeckite); amosite (cummingtonite-grunerite); anthophyllite; tremolite; and actinolite. (See 40 CFR § 763.83 and § 763.163.)

Aspect Ratio: A dimensionless value, calculated as the length of a particle divided by its diameter (or apparent width) (EPA, 2014). Also known as length:width ratio.

Chrysotile: A mineral in the serpentine mineral group that occurs in the asbestiform habit with the general formula $\text{Mg}_3\text{Si}_2\text{O}_5(\text{OH})_4$. Chrysotile generally occurs segregated as parallel fibers in veins or veinlets forming bundles which can easily be separated into individual fibers when disturbed. Often referred to as “white asbestos,” chrysotile is the lone type of asbestos in the serpentine mineral group and the most common type of commercial asbestos (EPA, 2014b).

Cosmetic (Cosmetic Products): The Federal Food, Drug and Cosmetic Act (FD&C Act), at section 201(i), defines cosmetics by their intended use, as “articles intended to be rubbed, poured, sprinkled, or sprayed on, introduced into, or otherwise applied to the human body ... for cleansing, beautifying, promoting attractiveness, or altering the appearance.”

Crocidolite: The asbestiform variety of the amphibole mineral riebeckite or magnesio-riebeckite having the general formula $\square[\text{Na}_2][\text{Z}^{2+}_3\text{Fe}^{3+}_2]\text{Si}_8\text{O}_{22}(\text{OH},\text{F},\text{Cl})_2$ [\square is a site vacancy in the crystal structure]. Often referred to as blue asbestos (www.mindat.org).

Energy Dispersive X-ray Spectroscopy Analysis (EDS): Energy dispersive X-ray spectroscopy is a standard method for identifying and quantifying elemental compositions in a very small sample of material in TEM or SEM, respectively. In a properly equipped TEM or SEM, the atoms on the surface are excited by the electron beam, emitting specific wavelengths of X-rays that are characteristic of the atomic orbital structure of the elements. A solid-state energy dispersive detector discriminates among X-ray energies and can analyze these X-ray emissions. (See Ebnesajjad, 2014.)

Elongate Mineral Particle (EMP): Adopted as a descriptive term in NIOSH Bulletin 62 (2011). EMP is a scientifically-preferred term to describe mineral particles with an aspect ratio of $\geq 3:1$ (NIOSH Bulletin 62 (2011)).

Grunerite: An amphibole mineral in the cummingtonite-grunerite series with the general formula $\square\{\text{Fe}^{2+}_2\}\{\text{Fe}^{2+}_5\}(\text{Si}_8\text{O}_{22})(\text{OH})_2$ [\square is a site vacancy in the crystal structure]. The asbestiform variety of this mineral is referred to as grunerite asbestos.

Habit (Crystal Habit) (mineralogical): The characteristic external shape of an individual crystal or crystal group due to crystal growth. A mineral may exhibit multiple habits due to different conditions (e.g., temperature, pressure, geological events) that were prevalent when crystal growth took place.

Mesothelioma: Mesothelioma is cancer of the mesothelium, which is the layer of cells of mesodermal origin that lines the embryonic body cavity and gives rise to the squamous cells of the peritoneum, pericardium, and pleura.

Optical microscopy: Microscopic technique that uses visible light for illumination. Includes Phase Contrast Microscopy and Polarized Light Microscopy.

Phase Contrast Microscopy (PCM): Phase contrast microscopy is an optical microscopy technique that converts phase shifts in light passing through a transparent specimen to brightness changes in the image. Phase shifts themselves are invisible but become visible when shown as brightness variations.

Polarized Light Microscopy (PLM): Polarized light microscopy is an optical microscopy technique where the illumination of the object under view involves polarized visible light. This technique can be used to identify minerals based on optical properties.

Richterite: Richterite is a sodium-calcium-magnesium-silicate amphibole mineral with the formula $[\text{Na}(\text{CaNa})\text{Mg}_5\text{Si}_8\text{O}_{22}(\text{OH})_2]$. If iron replaces the magnesium within the structure of the mineral, it is called ferorichterite; if fluorine replaces the hydroxyl, it is called fluororichterite. Non-fibrous and fibrous varieties, including asbestiform, are known (International Mineralogical Assoc., <https://ima-mineralogy.org/Minlist.htm>; webmineral.com; see <http://www.handbookofmineralogy.org/pdfs/richterite.pdf> for more information).

Selected Area Electron Diffraction (SAED): A technique in TEM in which the crystal structure of a small area of a sample is examined using the beam of electrons. SAED generates a distinctive pattern related to the spatial relationship of atoms in the crystal structure of a particle and thus can be helpful in making a definitive mineral identification (ISO 10312).

Scanning Electron Microscope (SEM): The scanning electron microscope uses a focused beam of high-energy electrons to generate a variety of signals at the surface of solid specimens. The signals that derive from electron-sample interactions reveal information about the sample, including external morphology (texture), chemical composition (see EDS), crystalline structure, and orientation of materials making up the sample.

Serpentine (Serpentine Group, Serpentine Mineral): A group of hydrous magnesium-rich silicate minerals of the phyllosilicate (sheet silicates) class. The typical composition of these

minerals approximates $(\text{Mg,Fe})_3\text{Si}_2\text{O}_5(\text{OH})_4$. With respect to talc deposits, three noteworthy serpentine minerals are relevant: antigorite, lizardite, and chrysotile.

Talc, Mineral: Talc, in its pure mineral form, is a hydrous magnesium phyllosilicate mineral with a chemical composition of $\text{Mg}_3\text{Si}_4\text{O}_{10}(\text{OH})_2$. (See <https://geology.com>; <http://www.handbookofmineralogy.org/pdfs/talc.pdf>.)

Transmission Electron Microscope (TEM): Transmission electron microscope generates and passes a beam of electrons through a sample to form an image.

Tremolite: A calcic amphibole mineral in the series tremolite-ferroactinolite with the formula $\square\text{Ca}_2(\text{Mg}_{5.0-4.5}\text{Fe}^{2+}_{0.0-0.5})\text{Si}_8\text{O}_{22}(\text{OH})_2$ [\square is a site vacancy in the crystal structure]. The asbestiform variety is referred to as tremolite asbestos. (See EPA, 2014, Appendix A; International Mineralogical Assoc., <https://ima-mineralogy.org/Minlist.htm>; see also <http://www.handbookofmineralogy.org/pdfs/tremolite.pdf>.)

Winchite: Winchite is a sodium-calcium amphibole with the formula $\square(\text{NaCa})(\text{Mg}_4\text{Al})\text{Si}_8\text{O}_{22}(\text{OH})_2$. Non-fibrous and fibrous varieties, including asbestiform, are known. [\square is a site vacancy in the crystal structure]. (International Mineralogical Assoc., <https://ima-mineralogy.org/Minlist.htm>; see <http://www.handbookofmineralogy.org/pdfs/winchite.pdf> for more information.)

X-Ray Diffraction (XRD): X-ray diffraction (XRD) analysis is a technique that provides detailed information about the crystallographic structure, chemical composition, and physical properties of materials, obtained by passing specific X-ray electromagnetic radiation through the sample (www.sciencedirect.com).

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* * *

Exhibit 2

Johnson & Johnson
BABY PRODUCTS COMPANY

April 26, 1973

MAY 2 Recd

RECEIVED

SUBJECT: WINDSOR MINERALS AND TALC

To: D. D. Johnston

Bill Ashton and I visited with Roger Miller and Vernon Zeitz on April 18th. We covered a number of points of considerable concern.

1. It is our joint conclusion that we should not rely on the "Clean Mine" approach as a protective device for Baby Powder in the current Asbestos or Asbestos-Form controversy. We believe this mine to be very clean; however, we are also confident that fiber forming or fiber type minerals could be found. The usefulness of the "Clean Mine" approach for asbestos only is over.

2. It is possible that the technique of identification for asbestos or asbestos-form materials will be an optical approach. It probably will be some variation of the McCrone method. This method with appropriate concentrating techniques will permit a good laboratory to identify asbestos or tremolite in a talc sample.

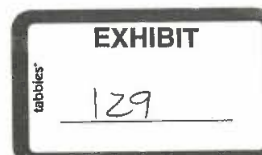
3. The current medical research is confirming that it is particle shape, not chemical substance which is harmful as such fiber-like materials will be suspect. The argument rages as to whether an aspect ratio of 3/1, 5/1, or 10/1 will be adopted.

The problem then is two fold, one for Windsor and one for Baby Powder.

a. At Windsor the mine is currently under the jurisdiction of the Bureau of Mines. The inspections of the mine indicate that we are well within the limits presently accepted for non-fibrous dust. Roger Miller feels that they could live within the current TLV values for fibrous talc of 5 parts per million. We don't know the impact of a TLV of 2 fibers per cubic meter.

The May 8th meeting will primarily be an information meeting on mine and manufacturing safety. We would not expect standards to be set, however, there will be agitation probably by OSHA, NIOSH, and the Consumer Groups (Selikoff), to lower the standards for the industrial exposure to the same level as asbestos.

*For this
to be true
concentrate
plenty to
...
Depends on the
ratio picture... 10/1
should be a point
too early to tell.*



- 2 -

Windsor is currently cooperating heavily with the local Bureau of Mines man out of Albany and in fact teaching him how to use microscopic techniques to identify the presence or absence of fibers.

We recommend that Windsor have a representative at the May 8th meeting as observers and that no other J&J representation should be had at the Bureau of Mines meeting. We will review this strategy next week after a meeting with the Johns Manville people.

b. As for Baby Powder, the entire thrust of our communications with the FDA has concentrated on asbestos as harmful fiber-like material. Sophisticated techniques have been proposed to make sure that fiber-form materials present in samples were identified as being asbestos. The implication is that all other fiber-forms, if present, were talc or other minerals and these were safe. This posture will no longer be satisfactory. If the FDA Food Division, which is moving more rapidly than the Cosmetic Division, publishes a standard, it will probably be to ban asbestos-form or fibrous material in talc. That could eliminate the current uses of talc in packaging materials. These talcs contain widely varying amounts of tremolite or fibrous talc. Our Baby Powder contains talc fragments classifiable as fiber. Occasionally sub-trace quantities of tremolite or actinolite are identifiable (optical Microscope) and these might be classified as asbestos fiber.

5. We have been pursuing several alternatives to better protect our powder franchise. These include:

- a. An improvement in the flotation technique to better select platy talc, and perhaps reduce any tremolite or talc shards. The work is still in the lab and the timetable for commercialization is unknown. It is, however, a chemical procedure and therefore would probably not require major equipment change.
- b. A program investigating two different ways of removing a large portion of the very fine particles presently found in talc. We have demonstrated the feasibility of both approaches. The equipment and process development would take between 9 and 12 months on a crash basis. Other approaches which might be less expensive or more effective, have only been talked about. A crash engineering program could be

J&J-0145686

-3-

undertaken with a good chance of success in this area. It should be cautioned, however, that no final product will ever be made which will be totally free from respirable particles. We are talking about a significant reduction in fine particle count but not 100% clean-up.

- c. Corn Starch is obviously another answer. The product by its very nature does not contain fibers. Furthermore, it is assimilated by the body.

We would recommend that items "a" and "c" receive top priority. The Corn Starch program is primarily one of merchandising and the development of explosion proof facilities. We would recommend this program be spearheaded by a task force under Jim Dettre.

The flotation program is currently being worked on at Windsor by Vernon Zeitz. We would propose a task force of Zeitz, Goodman, and Ashton and Rolle, to identify the opportunities in removing fiber-like materials from the beneficiated talc, with a recommendation to Management in 30 days.

6. If we are agreed with the above, then the Battelle Program should be restudied to include cells of animals on a, b, and c. We might wish these to be new cells, or to delete certain cells now in the program.

D. R. Petterson

DRP/mm

cc: W. Ashton
R. Miller
File.

J&J-0145687

Exhibit 3

Date	Exhibit #	Testing Entity	Author	Recipients	Purpose Stated	Test method	Mine	What was tested	Special Preparation	What tests revealed	Hopkins Comments	Satisfies PDA, RFA, CRR
10/15/1957	J&J-309	Battelle	Smith					Italian talc processed talc Italian		"the Italian talc averages about 10% fibrous or adular particles"		
5/9/1958	J&J-1	Battelle	Smith	Dr. Lyman		petrograph	Val Chisone	1 processed talc-Italian		tremolite tremolite; 6 to 10 % fibrous talc		
5/29/1958	J&J-2	Battelle	Smith	Dr. Lyman		microscope	Val Chisone	1				
12/4/1970	J&J-9	Colorado School of Mines	Colorado School of Mines	Miller		XRD & petrograph	Hammondsville	38 core samples		tremolite-actinolite; fibrous talc		
3/9/1971	J&J-257	McCrone	Grieger	Goudie		SAED; XRD		Shower to Shower; medicated powder		"fiber of chrysotile.. Was very clear". "medicated powder we found one fiber of chrysotile". Shower to Shower..we feel strongly that it may be chrysotile..chrysotile is very low"; >>> Final Report >>> "Shower to Shower The fiber content of Shower to Shower is quite low in comparison to previous samples which we have investigated..We found three suspect fibers..Of these, two were found in one field and probably have the same source..very possibly contamination..it is still questionable whether they are chrysotile. We have, however, found traces of chrysotile in G 11 one of the additives to Shower to Shower, and this might be a possible source of these contaminant fibers."		YES
5/14/1971	J&J-255	J&J	Ashton	Smith		XRD		Baby Powder (production batch)		tremolite; tremolite-actinolite		
7/2/1971	J&J-256	Colorado School of Mines	Pattengill	Ashton		XRD; PLM		six monthly plant run samples		5 of 6 show tremolite-actinolite; "no other forms of nontalo minerals approaching asbestos types were identified"		
7/7/1971	J&J-15	Colorado School of Mines	Pattengill	Ashton		XRD	Vermont talc	processed talc-344-L		tremolite & actinolite		
7/29/1971	J&J-19	Colorado School of Mines, McCrone, Dartmouth	Nashel	Foster			Vermont talc			"trace amounts of fibrous minerals; (tremolite/actinolite)."		
10/12/1971	J&J-23	McCrone	Grieger	Goudie	appearance and fiber content	electron diffraction		Shower to Shower		traces of chrysotile in one of additives		YES
11/11/1971	J&J-376	McCrone	Grieger	Goudie		TEM		Shower to Shower		"The Shower to Shower appeared to have a few more fibers than the other two samples, however I think that might be due to possible contamination from the G-11. In the G-11 we did find two positively identified chrysotile fibers and some other fibers which at first glance appeared to be chrysotile, when you look at the electron diffraction pattern. I believe that most of the fibers in Shower to Shower which are suspect may come from G-11. I left out the comments on G-11 from the report because I felt you might want to change your supplier or investigate your supplier, and this would only tend to confuse the issue perhaps with the FDA."		



8/3/1972 J&J-28	NYU	Seymour Lewin	Dr. Weissler (FDA)		XRD		Shower to Shower sample 84		5% chrysotile;	YES
8/10/1972 J&J-373	J&J				PLM		Shower to Shower		"About 1 fiber or rod/needle every 500 particles. Approx. 1/3 of these are tremolite"	
8/24/1972 J&J-29	Sperry Rand	Nashed	Dr. R. A. Fuller	FDA submits Lewin sample	SEM		Shower to Shower		"asbestos fibers could be detected in the sample"; "reported chrysotile"	YES
8/31/1972 J&J-348	Sperry Rand	J. Wehrung			SEM		Shower to Shower		Dr. Weissler used SEM "to study general shape of chrysotile asbestos." "Dr. Weissler he did find fibers which had the general shape of chrysotile". Also found "asbestos form fibers" in samples brought by JJ which were photographed."	
9/8/1972 D-7	Sperry Rand	JJ Wehrung			SEM		Shower to Shower		Observation of asbestos form "more correctly be called fiberform" SEM "very able to identify fiberforms which may be chrysotile"	
9/26/1972 J&J-31	Dr. Lewin	Dr. Nashed	Dr. Fuller				J&J Medicated Powder; Johnson's Baby Powder; J&J Shower to Shower Johnson's Baby Powder batch # 108T & 109T (Lewin Samples)		Medicated Powder: tremolite 4% Baby Powder: 2-3% chrysotile Shower to Shower: 2-5% chrysotile	YES
10/27/1972 J&J-36,34,37	McCrone	Stewart	Goudie	"the presence of asbestiform minerals"	XRD; TEM				"Both samples contained an insignificant amount of tremolite;" tremolite rods	YES
2/26/1973 J&J-100	Colorado School of Mines	Reid	Ashton	mineralogy & occurrence of any asbestos type minerals	XRD		processed talc	centrifuging	tremolite-actinolite; slight trace of anthophyllite? Chrysotile? "asbestos type materials"	YES?
4/26/1973 J&J-44	J&J	Petterson	Johnston		PLM	Hammondsville	Johnson's Baby Powder		"tremolite or actinolite are indentifiable (optical microscope) and these might be classified as asbestos fiber"	No
4/27/1973 J&J-335	J&J				optical microscope		Johnson's Baby Powder		trace amounts of amphiboles in all samples. "The optical properties of the apticles are closer to actinolite than tremolite"	
5/1/1973 J&J-367		Miller	Petterson			Hammondsville ore			"the orde body contains tremolite"	Doesn't say which mine
5/8/1973 J&J-368	J&J		Petterson			Hammondsville ore			"Your question this morning was how did Lewin assay timing relate to actinolite showings Baby Powder lots 108T & 109T were alleged to contain asbestiforms by Lewin. Talc shipments checked by microscope here showed all lots clean just prior to and right after that time. the first showing of actinolite we know about is October 1972. The indications are that things were in good shape when Lewin picked up the above two lots for his assays."	
6/6/1973 J&J-47	Cardiff	Pooley	Ashton				our Vermont talc	concentration technique	actinolite	
9/6/1973 J&J-258	FDA	Stuart		"determination of asbestos"	XRD; PLM		Shower to Shower sample 84		"fibers of tremolite/actinolite"	Yes
12/21/1973 J&J-263	Colorado School of Mines	Reid	Ashton	"examined for chrysotile and/or tremolite"	TEM		Vermont talc samples	centrifuge	"identified chrysotile at a level of less than 10 ppm in the Vermont sample"	Yes

[illegible]

1/25/1977	J&J-141	Cardiff	Pooley			XRD		Vermont composite sample		fibers of antigorite		
6/14/1977	J&J-246	EMV				SEM; XRD		ore & product		composite samples-large and small fibrous tremolite	Source unknown- Mr. Bicks says look in Metadata	YES?
2/9/1979	J&J-164	George Lee's Group	Cohen					66 composite samples		tremolite & actinolite		
9/1/1983	J&J-175	McCrone	Palenik	Miller	"airborne fiber concentrations"	NIOSH method	Argonaut; Rainbow	air samples		Argonaut - 118 fibers, Rainbow- 2650 fibers	Type of fiber not specified	YES
11/2/1984	J&J-179	McCrone	Palenik	Miller	"analysis for asbestos"	TEM- EPA method		air samples		5,600 to 60,000 chrysotile asbestos fibers. All samples found asbestos		YES
5/15/1985	J&J-177	MSHA	Olson		analysis for "asbestos-form minerals"	PLM; XRD	Italian talc	air samples at Cyprus South Plainfield		71.2% fibrous talc & "5.8% anthophyllite, an asbestiform amphibole"		YES
8/5/1985	J&J-184	McCrone	Laubenthal	Miller		PCM	Hammondsville	air samples		fibers in both samples	Type of fiber not specified	YES
3/30/1987	J&J-185	J&J	Schmidt	Miller			Raymond Mill	Processed talc		"Tremolite is present in the fines (minus 100 plus 200 mesh) in six volume percent as free needles"		
4/15/1988	J&J-190	Skyline Laboratories, Aquatec Environmental				XRD	Chester/Hamm	random and composite process samples		actinolite		
2/25/1992	J&J-202	Cyprus	Munro				Argonaut; Hammondsville; Black Bear	ore		"fibrous tremolite was identified in exposures and cores at the east Argonaut 7 Black Bear mines. Cyprus staff report past tremolite from the Hammondsville and Clifton deposits."		
0/00/0000	J&J-298	McCrone						Windsor grade 36		chrysotile		
02/09/1979	J&J-341	J&J	Lee					Windsor 66 composite sample		"massive amphiboles in the 66 composite sample of Nov 6-10. the sample was forwarded to George Lee's group where the present of amphiboles was confirmed. They were identified as tremolite & actinolite"	duplicate of J&J 164	
05/09/1958	J&J-311	Battelle	Smith	J&J		Petrograph		Italian talc		"acicular and fibrous particles of talc"; the 8 to 10% of nonplaty talc is presumed to be derived from tremolite or enstatite"		
1/12/1984	J&J-305	McCrone	Palenik	Miller		PLM		Talc powder, grade EV		actinolite. The tremolite-actinolite in the sample is considered to be asbestos by current government regulations, however, it appeared to be cleavage fragments of the massive form rather than true asbestiform. typical tremolite fibers		
1/24/1958	J&J-310	Battelle	Brown	Lycan J&J				Italian talc		3 to 10% non platy with trace amounts of tremolite		
4/19/1973	J&J-296	J&J	Hamer			Dispersion staining		Johnson's Baby Powder		"four of the samples are suspected of containing tremolite based on the finding of one or two "fibers" per sample which satisfy the color/morphology criteria."		

4/27/1973	J&J-395	J&J				Petrographic optical microscope	Johnson's Baby Powder		"trace amounts of amphibole" in all 4 samples tested; "Shape- prismatic, columnar, parallel-sided rods" ; Size: from 20X4 microns to 200X90 microns; Identity: the optical properties of the particles are closer to actinolite than tremolite"		
7/05/1976	J&J-303	Colorado School of Mines				optical microscope	Johnson's Baby Powder		"small (1%?) amounts of amphibole needles."		
8/09/1972	J&J-342	J&J					Shower to Shower		"trace tremolite" in 1970 and 1971 samples	No chrysotile observed	
8/27/1973	J&J-299	Dutch consumer organization				electron microscope (REM)	Johnson's Baby Powder		"asbestos - content of 1.59%"		
9/11/1975	J&J-297	McCrone	Stewart	Zeltz			A-HC		chrysotile fiber	Plate 4682 A-HC 51,000X Chrysotile fiber	
9/18/1961	J&J-313	Battelle	Smith	Ashton		petrograph	Hammondsville core		2 percent non platy talc in upper core; 14% (granular and fibrous) non platy talc with 1-2% altered amphiboles in lower core		
??/??/???		Dutch Consumers					Johnson's Baby Powder		claimed to have found asbestos		
??/??/1972	J&J-33	University of Minnesota			determine possible content of fibrous chrysotile asbestos	TEM	Shower to Shower		"chrysotile asbestos does exist in the specimens of shower to shower"		
0/00/1991	J&J-327	Cypress	Munro				Argonaut mine		"Argonaut main ore body open pit . high incidence of fibre bearing zones encountered in the main ore body"		
0/00/1991	J&J-327	Cypress	Munro				Hamm mine;		"areas with fibrous actinolite"		
7/9/??	J&J-17	Mt. Sinai	J&J			electron microscopy	Johnson's Baby Powder		chrysotile asbestos		
10/27/1972	J&J-26	J&J	Nashed	Goudie			Johnson's Baby Powder batch # 108T & 109T (Lewin Samples)		"There are trace quantities (tremolite) present confirmed both by McCrone & Bill Ashton Levels are extremely low but occasionally can be seen optically. This is not new."		

Exhibit 4



VITAE

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MAS, LLC
3945 Lakefield Court
Suwanee, Georgia 30024
Work Telephone: (770) 866-3200

EDUCATION

October 1980 to December 1983	Received Doctor of Philosophy in Materials Science and Engineering, University of Florida
June 1979 to October 1980	Completed requirements for Master of Science in Materials Science and Engineering, University of Florida
September 1972 to June 1977	Received Bachelor of Science degree; Major in Microbiology, Minor in Chemistry, University of Florida.

PROFESSIONAL WORK HISTORY

February 2020 to Present	Chief Executive Officer
September 1987 to January, 2020	President of MAS, LLC (previously Materials Analytical Services, Inc.) Suwanee, Georgia.
August 1987 to February 1988	President and Founder of Longo Microanalytical Services, Inc., Gainesville, Florida.
October 1983 to August 1987	President and Founder of Micro Analytical Laboratories, Inc., Gainesville, Florida.
March 1985 to December 1987	Visiting Assistant Professor; University of Florida, Department of Materials Science and Engineering.
August 1983 to March 1985	Post Doctoral Associate; University of Florida, Department of Materials Science and Engineering.

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PATENTS

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PUBLICATIONS AND PRESENTATIONS

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Egilman, David, Stefen, Joan, Tran, Triet, Clancy, Kate, Rigler, Mark, Longo, William "Health Effects of Censored Elongated Mineral Particles: A Critical Review, ASTM, STP 1618, 2019

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ACTIVITIES AND ORGANIZATIONS

- * Member of Environmental Protection Agency Workshop on Sampling and Analysis of Asbestos in Settled Dusts, July 1989.
- * Member of Environmental Protection Agency Peer Review Group for the Asbestos Engineering Program, 1987 to present.
- * Vice-Chairman of the National Asbestos Council Analytical Subcommittee on Transmission Electron Microscopy 1987-1988.
- * Chairman of National Asbestos Council Analytical Subcommittee on Transmission Electron Microscopy 1988-1989.
- * Member of ASTM D-22-05 Subcommittee for Indoor Air Pollution.

LECTURES AND COURSES INSTRUCTED

Longo, W.E. "Electron Microscopy for Industrial Hygiene Applications" American Industrial Hygiene Conference Professional Development Course, Atlanta GA, May 2004.

Longo, W. E. "Settled Dust: Asbestos and Other Particulates" Georgia Institute of Technology Seminar, August 1991.

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Longo, W. E. "Fundamentals of Asbestos Analysis by TEM" Institute in Materials Science State University of New York. New Paltz, New York, October 1988 (Course Director).

Longo, W. E. "TEM Imaging/Photography" Georgia Institute of Technology, Transmission Electron Microscopy Asbestos Analysis Course, June 1988.

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Longo, W.E. "Asbestos Air Sample Analysis by Transmission Electron Microscopy" American Industrial Hygiene Conference Professional Development Course, Dallas, TX May 1986.

PROFESSIONAL MEMBERSHIPS

American Industrial Hygiene Association	1985, 1999 to Present
American Society for the Testing of Materials	1986 to Present
American Society of Materials	1994, 2009-Present
National Asbestos Council	1984 to 1993
Environmental Information Association	1993, 2008-Present
Materials Research Society	1988, 2010-2014
Electron Microscopy Society Association	1988 to Present
Micro Analysis Society formerly known as Microbeam Society	1988, 2009-2012, 2018
New York Academy of Science	1985 to 1987 1989 to 1994
Air Pollution Control Association	1985 to 1987



National Institute of Building Sciences	1991 to Present
The Society for Ultrastructural Pathology	1996
American Society of Heating, Refrigerating and Air-Conditioning Engineers	1996 to Present
The American College of Forensic Examiners – Fellow of Forensic Engineering Technology (IN. 17825)	1999 to 2017
American Conference of Governmental Industrial Hygienist (ACGIH) Associate Member	2006 to Present, 2007-2009
American Chemical Society	2012-Present

Updated: 03/12/2020

Exhibit 5

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY

IN RE: JOHNSON & JOHNSON
TALCUM POWDER PRODUCTS
MARKETING SALES
PRACTICES, AND PRODUCTS
LIABILITY LITIGATION } MDL NO.16-2738 (FLW) (LHG)

VIDEO-RECORDED DEPOSITION OF
WILLIAM E. LONGO, PH.D.

February 5, 2019
10:24 a.m.

Suite 100
11555 Medlock Bridge Road
Johns Creek, Georgia

Frances Buono, RPR, CCR-B-791

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Also Present:

George Montiel, Videographer

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Case 3:16-md-02738-MAS-RLS Document 35-132-1 Filed 08/23/24 Page 55 of 924			
5 PageID: 248126			
INDEX TO EXHIBITS			
1	INDEX TO EXAMINATIONS		
2			
3	Examination	Page	
4			
5	Examination by Mr. Chachkes	8	
6	Examination by Mr. Prost	320	
7	Examination by Ms. O'Dell	347	
8	Further Examination by Mr. Prost	356	
9	Examination by Mr. Silver	359	
10			
11	- - -		
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
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INDEX TO EXHIBITS			
2	Defendants'		
3	Exhibit	Description	Page
4			
5	11	December 20, 2018 letter to Dr. Longo from J3	14
6	12	An EDXA spectra	74
7	13	Geological Society of Connecticut article	83
8	14	Effect on Particle Size by Addison Davies Technique	121
9	15	Three-axis SAED for tremolite	144
10	16	Verification of 0-Degree Amphibole Diffraction Patterns	146
11	17	Verification of 0-Degree Amphibole Diffraction Patterns	157
12	18	An SAED	179
13	19	TEM Bulk Talc Structure Count Sheet	200
14	20	Handdrawn diagram	209
15	21	ISO 13794 standard	221
16	22	TEM photomicrographs	247
17	23	Photograph	253
18	24	PLM analysis bench sheet	278
19	25	Photographs	285
20			
21	(Original Exhibits 1 through 25 have been attached to the original transcript.)		
22			
23	- - -		
24			
25			
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INDEX TO EXHIBITS			
1			
2	Defendants'		
3	Exhibit	Description	Page
4			
5	1	Dr. Longo's CV	10
6	2	January 15, 2019 report titled The Analysis of Johnson & Johnson's Historical Product Containers and Imerys' Historical Railroad Car Samples from the 1960's to the Early 2000's for Amphibole Asbestos Supplemental Report	10
7			
8			
9	3	November 14, 2018 report titled The Analysis of Johnson & Johnson's Historical Baby Powder & Shower to Shower Products from the 1960's to the Early 1990's for Amphibole Asbestos	10
10			
11			
12			
13	4	ISO 22262-1 standard	11
14	5	ISO 22262-2 standard	11
15	6	ISO 22262-3 standard	11
16	7	February 1, 2019 report titled The Analysis of Johnson & Johnson's Historical Product Containers and Imerys' Historical Railroad Car Samples from the 1960's to the Early 2000's for Amphibole Asbestos, 2nd Supplemental Report	11
17			
18			
19			
20	8	Quality Assurance Report, Johnson and Johnson's JBP and STS, Imerys Railcar and Asian Talc for Amphibole Asbestos, January 31, 2019	14
21			
22	9	Thumb drive containing three reports, November, January, and the March 2018	14
23			
24	10	December 12, 2018 letter to Dr. Longo from J3	14
25			
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INDEX TO EXHIBITS			
1	(Reporter disclosure made pursuant to		
2	Article 10.B. of the Rules and Regulations of		
3	the Board of Court Reporting of the Judicial		
4	Council of Georgia.)		
5	(Identification statement by		
6	videographer.)		
7	WILLIAM E. LONGO, PH.D.,		
8	having been first duly sworn, was examined and		
9	testified as follows:		
10	EXAMINATION		
11	BY MR. CHACHKES:		
12	Q.	Good morning, Dr. Longo.	
13	A.	Good morning.	
14	Q.	And my name is Alex Chachkes; I represent	
15	J&J.	We've met before; right?	
16	A.	Yes, sir, we have.	
17	MR. CHACHKES: Okay. I want to begin the		
18	depo with an objection to the late productions.		
19	On Saturday we received a new 92-page report and		
20	almost 7,000 pages of new back-up material. On		
21	Sunday we received supplemental reports, two new		
22	reports from J3 and hundreds of other pages.		
23	So when we conclude today we are going to		
24	expressly keep the deposition open subject to		
25	our analysis of the new production; and if it		
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10:24:58 **1** turns out that it is material that if we had
 10:25:00 **2** gotten earlier we would have asked about today,
 10:25:03 **3** we are going to recall the witness.
 10:25:06 **4** MS. O'DELL: Well, we would object to any
 10:25:08 **5** motion to hold the deposition open. The
 10:25:10 **6** requests that were made for data that was
 10:25:13 **7** supplied on Saturday and earlier in the week
 10:25:17 **8** were late requests, actually only received five
 10:25:22 **9** or I think it was seven days beforehand, they
 10:25:23 **10** were timely produced, and you've had sufficient
 10:25:26 **11** time to review them.
 10:25:27 **12** The supplement that you're referring to
 10:25:28 **13** that was produced on Sunday corrected a couple
 10:25:32 **14** of typographical errors and clarified the
 10:25:37 **15** identification of a sample, none of which is
 10:25:40 **16** sufficient to hold the deposition open, so we
 10:25:42 **17** are going to oppose any such motion. Today's
 10:25:46 **18** your opportunity to depose Dr. Longo on these
 10:25:48 **19** samples.
 10:25:49 **20** MR. CHACHKES: Obviously, we disagree, and
 10:25:51 **21** we thought that material should have been
 10:25:53 **22** produced and we should not have to fight for it,
 10:25:56 **23** but it's a fight for another day.
 10:25:58 **24** So we've premarked some exhibits, some
 10:26:00 **25** things I'm sure we will be coming back to later.
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10

10:26:02 **1** What I want to do is maybe just go through those
 10:26:04 **2** quickly so they are on the record.
3 (Defendants' Exhibit 1 was marked for
4 identification.)
 10:26:08 **5** Q. (By Mr. Chachkes) Dr. Longo, you can
 10:26:08 **6** confirm what's been marked as Exhibit 1 is your CV;
7 is that correct?
 10:26:15 **8** A. Yes, sir.
 10:26:15 **9** Q. And are there any updates to this since we
 10:26:17 **10** received it?
 10:26:18 **11** A. No, sir.
12 (Defendants' Exhibits 2 and 3 were marked
 10:26:18 **13** for identification.)
 10:26:18 **14** Q. (By Mr. Chachkes) Okay. What's been
 10:26:20 **15** marked as Exhibit 2 is your January 16 expert report
 10:26:30 **16** extracted --
 10:26:33 **17** MS. O'DELL: November 14.
 10:26:33 **18** Q. (By Mr. Chachkes) I'm sorry. What has
 10:26:34 **19** been marked as Exhibit 2 is your November 14 expert
 10:26:36 **20** report in this matter minus the backup data.
 10:26:39 **21** Can you confirm that?
 10:26:40 **22** A. This is actually the January 15.
 10:26:43 **23** Q. So --
 10:26:46 **24** A. November 14 is Exhibit 3.
 10:26:48 **25** Q. All right. Let's do that again.
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10:26:49 **1** So Exhibit 2 is your January 16 expert
 10:26:54 **2** report in this matter minus the backup data that was
 10:26:57 **3** attached to it when it was produced; is that correct?
 10:27:00 **4** A. Yes, sir.
 10:27:00 **5** Q. Okay. And then Exhibit 3 is your
 10:27:06 **6** November 14 report in this matter which was, I
 10:27:09 **7** assume, superseded by Exhibit 2; correct?
 10:27:12 **8** A. Correct.
9 (Defendants' Exhibits 4, 5, and 6 were
 10:27:13 **10** marked for identification.)
 10:27:13 **11** Q. (By Mr. Chachkes) Okay. What's been
 10:27:15 **12** marked as Exhibits 4, 5 and 6, can you confirm that
 10:27:19 **13** these are ISO 22262-1, -2, and -3?
 10:27:29 **14** A. Yes, sir.
 10:27:30 **15** Q. So 1 will be 4, 2 will be 5, and 3 will be
 10:27:37 **16** 6.
17 (Defendants' Exhibit 7 was marked for
18 identification.)
 10:27:43 **19** Q. (By Mr. Chachkes) And then what's been
 10:27:45 **20** marked as Exhibit 7 is your second supplemental
 10:27:52 **21** report minus the backup data that was attached to it
 10:27:56 **22** dated February 1, 2019; is that correct?
 10:28:00 **23** A. Yes, sir.
 10:28:00 **24** Q. And it's my understanding that this report
 10:28:05 **25** supersedes what's been marked as Exhibit 2; is that
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12

10:28:12 **1** correct? So it supersedes the January report?
 10:28:15 **2** A. Yes, sir.
 10:28:17 **3** Q. And my understanding is that the only
 10:28:19 **4** difference between Exhibit 7 and Exhibit 2 is
 10:28:21 **5** Exhibit 7 corrects some typos?
 10:28:25 **6** MS. O'DELL: Object to the form.
 10:28:29 **7** THE WITNESS: The second supplement
 10:28:30 **8** report, essentially it was to clarification on
 10:28:35 **9** the Lee Poye J&J STS samples, 31F and 31G, and
 10:28:43 **10** it is J&J sample -- hold on, I want to get the
 10:28:53 **11** right numbers. Throws me off on two-sided. 77.
 10:29:28 **12** Q. (By Mr. Chachkes) That's okay. You've
 10:29:30 **13** given me the 31F and 31G. So am I correct in my
 10:29:34 **14** understanding that Exhibit 7 does more than correct
 10:29:38 **15** typos?
 10:29:39 **16** A. Yes. Exhibit 7 does not have any new
 10:29:45 **17** analytical data. The two samples that Lee Poye
 10:29:48 **18** had -- and I will just give the numbers -- the 31F
 10:29:52 **19** and the 31G I misunderstood. I thought that was
 10:29:54 **20** actually two samples from the same container.
 10:29:57 **21** It's actually one sample from two
 10:30:00 **22** different containers. The STS in it looks like a
 10:30:03 **23** gift wrapped for the spice and the regular. So
 10:30:08 **24** that's actually two containers for each sample. So
 10:30:11 **25** the number of containers was increased.
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10:30:13 **1** But the analytical data had been already
 10:30:16 **2** produced. Nothing changed in the analytical data.
 10:30:19 **3** And then we had some typos that we endeavored to
 10:30:24 **4** correct.
 10:30:24 **5** **Q.** Okay. And those are typos you found or
 10:30:26 **6** that counsel found?
 10:30:29 **7** MR. CIRSCH: Object to form.
 10:30:31 **8** THE WITNESS: Well, one of them counsel
 10:30:33 **9** found, and that was the counsel for Johnson &
 10:30:35 **10** Johnson, at my previous deposition on MDL.
 10:30:37 **11** There were some positive samples on a chart that
 10:30:40 **12** were negative in the overall data, so I decided
 10:30:43 **13** to go through and make sure everything was
 10:30:45 **14** correct again.
 10:30:47 **15** **Q.** (By Mr. Chachkes) What about the other
 10:30:48 **16** typos, you found those or counsel?
 10:30:52 **17** MR. CIRSCH: To the extent -- I would not
 10:30:53 **18** have you reveal, Dr. Longo, anything that's work
 10:30:56 **19** product is protected under Rule 26. But if you
 10:30:58 **20** can answer aside from that, please do.
 10:31:01 **21** THE WITNESS: No, counsel did not
 10:31:02 **22** participate in helping to find typos.
 10:31:04 **23** **Q.** (By Mr. Chachkes) Okay. So you found
 10:31:05 **24** them personally?
 10:31:06 **25** **A.** Personally and Dr. Rigler.
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14
1 (Defendants' Exhibits 8, 9, 10, and 11
 10:31:08 **2** were marked for identification.)
 10:31:08 **3** **Q.** (By Mr. Chachkes) Okay. And now
 10:31:09 **4** Exhibit 8, if you would look at that, if you could
 10:31:12 **5** confirm, is the January 31 quality control -- quality
 10:31:19 **6** assurance report that you created in this case?
 10:31:22 **7** **A.** Yes, sir.
 10:31:22 **8** **Q.** Okay. And then Exhibit 9, which is more
 10:31:28 **9** for the record than you because you can't confirm it,
 10:31:30 **10** it is a USB with the three reports in this case, the
 10:31:36 **11** November 1, the January 1, and the recent -- sorry.
 10:31:42 **12** Okay. So it is November, January, and the March 2018
 10:31:46 **13** report are all in full on Number 9. It's just too
 10:31:50 **14** much paper so we put it on the USB.
 10:31:52 **15** Can you confirm that Exhibit Number 10 is
 10:31:59 **16** a letter to you from J3 dated December 12, 2018,
 10:32:04 **17** about the MAS split of 21 historic talc samples by
 10:32:13 **18** XRD?
 10:32:14 **19** MR. CIRSCH: It's actually December 20.
20 MR. CHACHKES: What did I say?
 10:32:20 **21** MR. CIRSCH: December 12.
 10:32:20 **22** **Q.** (By Mr. Chachkes) I'm sorry. So it's
23 December --
24 MS. TROVATO: No, you're right. You're
25 right.
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10:32:20 **1** MR. CHACHKES: So which ones, then?
2 MS TROVATO: December 12 is 10.
 10:32:22 **3** **Q.** (By Mr. Chachkes) Okay. So December 12
 10:32:23 **4** is Exhibit 10; is that correct?
 10:32:26 **5** **A.** Yes.
 10:32:28 **6** **Q.** Okay. You should probably look at your
 10:32:30 **7** own copies, not mine.
 10:32:31 **8** **A.** Did I get a copy?
 10:32:33 **9** **Q.** Yes, you did.
 10:32:34 **10** **A.** Okay. Sorry.
 10:32:35 **11** Yes, that's correct.
 10:32:36 **12** **Q.** Okay. And Exhibit Number 11, we
 10:32:40 **13** premarked, is another letter from J3 dated
 10:32:44 **14** December 20 to you; correct?
 10:32:46 **15** **A.** Correct.
 10:32:46 **16** **Q.** All right.
 10:32:52 **17** MR. CIRSCH: I'm sorry again, but
 10:32:55 **18** Exhibit 10 I have says December 20 as well, so
 10:32:57 **19** maybe that's -- okay. I just got two of them.
 10:33:00 **20** Never mind.
 10:33:04 **21** **Q.** (By Mr. Chachkes) You received your
 10:33:06 **22** doctor's in philosophy in materials science and
 10:33:08 **23** engineering; correct?
 10:33:10 **24** **A.** Yes.
 10:33:10 **25** **Q.** You're not a geologist?
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16
 10:33:12 **1** **A.** I am not a geologist.
 10:33:13 **2** **Q.** You're not a mineralogist?
 10:33:15 **3** **A.** I did not take any courses in mineralogy.
 10:33:17 **4** **Q.** Do you consider yourself an expert in
 10:33:19 **5** mineralogy?
 10:33:20 **6** **A.** Usually that's up to the courts.
 10:33:22 **7** Certainly I believe I have more knowledge than the
 10:33:25 **8** average layperson, but I do not hold myself out with
 10:33:28 **9** any degrees in mineralogy.
 10:33:29 **10** **Q.** Okay. You're not a certified industrial
 10:33:31 **11** hygienist?
 10:33:31 **12** **A.** No, I'm not.
 10:33:33 **13** **Q.** You've done exposure assessments, though;
14 correct?
 10:33:37 **15** **A.** Yes.
 10:33:37 **16** **Q.** All right. You're an expert in exposure
 10:33:41 **17** assessments?
 10:33:42 **18** **A.** Again, I'm not sure what that means. I
 10:33:45 **19** certainly have done a number of studies in which we
 10:33:48 **20** have determined typical exposures from both
 10:33:52 **21** asbestos-added construction industrial products as
 10:33:56 **22** well as what I call hygiene exposure studies
 10:33:59 **23** involving Johnson & Johnson cosmetic talc samples.
 10:34:04 **24** Published on our exposure assessments in
 10:34:06 **25** the past. We use all standard protocols that are
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10:34:13 **1** accepted by the community of scientists who do this
 10:34:17 **2** type of work. Been qualified many times in court as
 10:34:20 **3** an industrial hygienist specifically to asbestos.
 10:34:23 **4** So again, I have probably more knowledge
 10:34:26 **5** than the average layperson on doing exposure
 10:34:29 **6** assessment type studies involving asbestos.
 10:34:32 **7** **Q.** When a plaintiff has been exposed to
 10:34:34 **8** multiple different talc-based products, each of which
 10:34:37 **9** could possibly contain asbestos, is it best to
 10:34:40 **10** analyze the asbestos content of each product?
 10:34:43 **11** **MR. CIRSCH:** Object to form.
 10:34:46 **12** **THE WITNESS:** I'm not sure it's required
 10:34:48 **13** to analyze each product. You will have to
 10:34:51 **14** clarify. Do you mean each different
 10:34:53 **15** manufacturer or from different talc sources,
 10:34:57 **16** such as the Italian or the Vermont or Montana?
 10:35:02 **17** **Q.** (By Mr. Chachkes) Let's say different
 10:35:03 **18** manufacturers. Let's say a plaintiff has been
 10:35:06 **19** exposed to talc-based products from three
 10:35:08 **20** manufacturers. Is it best to analyze the asbestos
 10:35:10 **21** content from each of the three manufacturers?
 10:35:13 **22** **MR. CIRSCH:** Object to form.
 10:35:15 **23** **THE WITNESS:** Certainly we try to do that;
 10:35:16 **24** but if three manufacturers all have to use the
 10:35:22 **25** talcum powder source is Italy, Italian, I think
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18
 10:35:26 **1** you can imply that if one manufacturer's Italian
 10:35:30 **2** talc has measurable levels or detectable levels
 10:35:35 **3** of amphibole asbestos, then the other
 10:35:40 **4** manufacturer more likely than not would have
 10:35:41 **5** similar types of concentrations, depending on
 10:35:44 **6** their processing flotation, et cetera.
 10:35:46 **7** If you have different manufacturers from
 10:35:49 **8** completely different mines and you haven't
 10:35:51 **9** analyzed anything from the particular talc mine,
 10:35:54 **10** which has happened to me in the past, I
 10:35:56 **11** typically say I don't have any opinions.
 10:35:58 **12** **Q.** (By Mr. Chachkes) Okay. If you're trying
 10:36:01 **13** to determine which manufacturer's talc contributed
 10:36:04 **14** what level of exposure to asbestos, do you need to
 10:36:09 **15** analyze all the different manufacturers' products?
 10:36:13 **16** **MR. CIRSCH:** Object to form.
 10:36:15 **17** **THE WITNESS:** Again, it depends on who the
 10:36:16 **18** manufacturer is. It's sort of an incomplete
 10:36:19 **19** hypothetical.
 10:36:19 **20** **Q.** (By Mr. Chachkes) Okay. Let me complete
 10:36:20 **21** it, then.
 10:36:22 **22** So hypothetically, if there's three
 10:36:23 **23** manufacturers each from a different geological
 10:36:26 **24** location, if you're trying to determine the exposure
 10:36:29 **25** of a plaintiff, do you need to -- and what percentage
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10:36:34 **1** of the asbestos exposure came from which talc, would
 10:36:37 **2** you need to analyze all three?
 10:36:39 **3** **MR. CIRSCH:** Object to form.
 10:36:40 **4** **THE WITNESS:** Again, that's an incomplete
 10:36:41 **5** hypothetical. If we had never analyzed any
 10:36:44 **6** manufacturer's source of talc from any
 10:36:47 **7** particular location, then as I stated earlier, I
 10:36:51 **8** would not have an opinion about that particular
 10:36:53 **9** manufacturer.
 10:36:54 **10** If they come from things like, again,
 10:36:57 **11** Vermont, Italy, say the Korean mines, then we
 10:37:03 **12** have a pretty good understanding of the levels
 10:37:05 **13** of amphibole asbestos that are typically found
 10:37:09 **14** in the products from those mines.
 10:37:11 **15** **Q.** (By Mr. Chachkes) Okay. So you feel
 10:37:12 **16** confident that you can testify to the amount of
 10:37:16 **17** amphiboles you expect in a bottle based solely on the
 10:37:19 **18** geography from which the bottle comes?
 10:37:23 **19** **MR. CIRSCH:** Object to form.
 10:37:24 **20** **THE WITNESS:** I didn't say that.
 10:37:25 **21** **Q.** (By Mr. Chachkes) Okay.
 10:37:25 **22** **A.** What I would say is we have analyzed a
 10:37:27 **23** number of samples from other manufacturers, two
 10:37:32 **24** different manufacturers, three different
 10:37:33 **25** manufacturers, where, say, the source is Italy, so I
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20
 10:37:36 **1** know that there will be significant concentrations in
 10:37:39 **2** some percentage of the samples.
 10:37:40 **3** **Q.** Okay. So let's say you have three bottles
 10:37:43 **4** from three geographical locations that you haven't
 10:37:46 **5** analyzed in the past. Do you need to analyze each
 10:37:48 **6** bottle to determine the percentage of asbestos
 10:37:51 **7** exposure per manufacturer?
 10:37:55 **8** **MR. CIRSCH:** Object to form.
 10:37:56 **9** **THE WITNESS:** When you say each bottle, I
 10:37:58 **10** have five from each or two from each or ten from
 10:38:01 **11** each?
 10:38:01 **12** **Q.** (By Mr. Chachkes) So does it matter?
 10:38:04 **13** **A.** I don't know. I mean, it's a
 10:38:07 **14** hypothetical. If we had not tested any samples from
 10:38:10 **15** any particular geological location, I would not
 10:38:15 **16** provide opinions on any -- the potential for
 10:38:18 **17** amphibole asbestos, regulated amphibole asbestos to
 10:38:21 **18** be in those containers.
 10:38:22 **19** **Q.** Would you agree it's important to at least
 10:38:28 **20** determine a plaintiff's exposure to asbestos on a
 10:38:31 **21** comparative basis if there were multiple sources of
 10:38:36 **22** exposure?
 10:38:38 **23** **MR. CHACHKES:** Object to form.
 10:38:41 **24** **THE WITNESS:** Depends on the information.
 10:38:43 **25** If the particular plaintiff says I use
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10:38:47 **1** manufacturer X, manufacturer Y, manufacturer Z,
 10:38:52 **2** and I used them all 33.33 percent each and they
 10:38:57 **3** all come from the same geological formation of
 10:39:01 **4** where cosmetic talc is being used in those
 10:39:04 **5** containers, then my opinion would be if it is a
 10:39:08 **6** geological location that we have tested in the
 10:39:11 **7** past, that they would all have similar -- that
 10:39:15 **8** the manufacturers would have similar exposures.
 10:39:17 **9** If one of the manufacturers was, well,
 10:39:20 **10** I've got a gift -- for example, if I got a gift
 10:39:22 **11** bag once a year and I would use it and that's
 10:39:26 **12** all, then I would say that the primary exposure
 10:39:28 **13** is from the other manufacturers.
 10:39:29 **14** So it just depends on the circumstances.
 10:39:31 **15** Q. (By Mr. Chachkes) Okay. You're not a
 10:39:33 **16** pathologist?
 10:39:34 **17** A. No, sir, I'm not.
 10:39:35 **18** Q. You have no medical training?
 10:39:37 **19** A. No, sir, I don't have any medical
 10:39:39 **20** training.
 10:39:39 **21** Q. Are you a statistician?
 10:39:41 **22** A. I'm not a statistician.
 10:39:42 **23** Q. Are you a geostatistician?
 10:39:45 **24** A. I'm not that kind of statistician either.
 10:39:48 **25** Q. Okay. So in light of the reports that we
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22
 10:39:50 **1** have in this case, are you here to testify in your
 10:39:53 **2** capacity as a microscopist; is that accurate?
 10:39:57 **3** MR. CIRSCH: Object to form.
 10:39:58 **4** THE WITNESS: I'm here to testify on the
 10:40:01 **5** qualifications I have and have been accepted in
 10:40:03 **6** the past. I'm a material scientist; I'm an
 10:40:07 **7** industrial hygienist; I have many expertise in
 10:40:10 **8** the analysis of asbestos.
 10:40:13 **9** My testimony in the past has been that any
 10:40:17 **10** particular types of manufacturers where we have
 10:40:21 **11** analyzed the talc and we have analyzed the
 10:40:24 **12** source -- know the source, that more likely than
 10:40:28 **13** not there would have been a significant exposure
 10:40:32 **14** based on the percentages of the samples that are
 10:40:34 **15** positive. That's as far as I go.
 10:40:36 **16** Q. (By Mr. Chachkes) You've testified in the
 10:40:38 **17** past the following: In my opinion, if you want to
 10:40:41 **18** know if there's asbestos in talc, you would go to
 10:40:44 **19** either our lab or Lee Poye's lab and that's it.
 10:40:47 **20** Do you recall that testimony?
 10:40:49 **21** MR. CIRSCH: Object to form. Do you have
 10:40:51 **22** a copy of the testimony you can show the
 10:40:53 **23** witness?
 10:40:53 **24** Q. (By Mr. Chachkes) Do you recall that
 10:40:53 **25** testimony?
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10:40:55 **1** MR. CIRSCH: Object to form.
 10:40:56 **2** THE WITNESS: I don't recall the exact
 10:40:57 **3** words, no.
 10:40:57 **4** Q. (By Mr. Chachkes) Okay. Do you agree
 10:40:58 **5** that if you want to know whether there's asbestos in
 10:41:00 **6** talc, you would go to either your lab or Lee Poye's
 10:41:03 **7** lab and that's it?
 10:41:04 **8** MR. CIRSCH: Object to form.
 10:41:05 **9** THE WITNESS: It depends on the
 10:41:06 **10** circumstances. If you're going to understand
 10:41:09 **11** what's your best opportunity to see and get the
 10:41:12 **12** appropriate detection limits, I'm only aware of
 10:41:16 **13** Lee Poye and our lab that use routinely the
 10:41:21 **14** heavy liquid density separation method.
 10:41:22 **15** There may be other labs out there doing
 10:41:24 **16** it, but that's the only two I know at the
 10:41:26 **17** moment.
 10:41:26 **18** Q. (By Mr. Chachkes) Okay. So you know of
 10:41:27 **19** no other labs besides yours and Lee Poye that can
 10:41:32 **20** accurately determine whether there's asbestos in
 10:41:35 **21** talc, at least using the concentration method?
 10:41:38 **22** MR. CIRSCH: Object to form.
 10:41:39 **23** THE WITNESS: Accurately determine? It's
 10:41:41 **24** all about getting the best analytical
 10:41:44 **25** sensitivity. So analytical sensitivities and
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24
 10:41:48 **1** using the non-heavy liquid density separation
 10:41:50 **2** method for TEM is usually in the low to 10 to 12
 10:41:59 **3** million fibers per gram.
 10:42:01 **4** The heavy liquid density separation can
 10:42:04 **5** reduce that; at least in our lab we have gotten
 10:42:06 **6** as low as 3,000 fibers/bundles per gram. I know
 10:42:11 **7** the R.J. Lee Group used the Blount heavy density
 10:42:16 **8** liquid separation method once for TEM. There is
 10:42:19 **9** an ISO protocol for it, so there may be other
 10:42:21 **10** labs that I'm not aware of.
 10:42:23 **11** Q. (By Mr. Chachkes) So are you the only
 10:42:24 **12** lab -- you and Lee Poye -- who can detect 3,000
 10:42:29 **13** structures per gram?
 10:42:32 **14** MR. CIRSCH: Object to form.
 10:42:34 **15** THE WITNESS: I don't know. Anybody
 10:42:35 **16** following the heavy liquid density measurement
 10:42:37 **17** technique should be able to achieve detection
 10:42:39 **18** limits --
 10:42:39 **19** Q. (By Mr. Chachkes) Okay.
 10:42:39 **20** A. -- as such.
 10:42:40 **21** Q. So your opinion about the high
 10:42:43 **22** qualifications of your lab and Lee Poye's lab, it's
 10:42:45 **23** not based on different methodologies; it's just based
 10:42:48 **24** on your opinion that you do it better?
 10:42:50 **25** MR. CIRSCH: Object to form.
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10:42:51 **1** THE WITNESS: Well, it's not really doing
 10:42:52 **2** it better; it's just following the appropriate
 10:42:54 **3** protocol for the analytical sensitivities.
 10:42:57 **4** There may be other labs out there. John
 10:43:00 **5** Fitzgerald's lab may be doing it now. I don't
 10:43:01 **6** know.
 10:43:03 **7** Q. (By Mr. Chachkes) Okay.
 10:43:04 **8** A. That's the only two I'm aware of that are
 10:43:06 **9** routinely doing it now.
 10:43:07 **10** Q. MAS has been testing talc for asbestos by
 10:43:11 **11** TEM since 2017; is that correct?
 10:43:14 **12** MR. CIRSCH: Object to form.
 10:43:16 **13** THE WITNESS: We have been testing
 10:43:17 **14** cosmetic talc since early 2017. We have tested
 10:43:21 **15** industrial talc all the way back to the 1990s,
 10:43:27 **16** early 2000s.
 10:43:28 **17** Q. (By Mr. Chachkes) MAS has been testing
 10:43:32 **18** talc for asbestos by PLM since about October of 2018;
 10:43:36 **19** is that correct?
 10:43:36 **20** MR. CIRSCH: Object to form.
 10:43:41 **21** THE WITNESS: I don't know when we got
 10:43:43 **22** started testing industrial talc for PLM.
 10:43:46 **23** Probably way back in the 1990s, early 2000s.
 10:43:51 **24** We've recently started analyzing cosmetic
 10:43:56 **25** talc using the ISO 22262-1 and the Blount PLM
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26
 10:44:05 **1** method enhanced, not your typical analysis. I
 10:44:11 **2** don't know when we got started last year.
 10:44:13 **3** Q. (By Mr. Chachkes) Okay. Is it possible
 10:44:16 **4** you didn't start looking at cosmetic talc by PLM
 10:44:19 **5** until October of 2018?
 10:44:21 **6** MR. CIRSCH: Object to form.
 10:44:23 **7** THE WITNESS: Well, unless I can go and
 10:44:24 **8** look and verify, all I can say is I don't recall
 10:44:26 **9** when we started analyzing cosmetic talc by PLM.
 10:44:31 **10** Q. (By Mr. Chachkes) Have any academic
 10:44:33 **11** institutions endorsed MAS as one of the best labs in
 10:44:37 **12** the world to test talc?
 10:44:39 **13** A. If they have, they haven't let me know.
 10:44:41 **14** Q. Has MAS received any accolades from any
 10:44:44 **15** academic institutions for its talc testing?
 10:44:47 **16** A. Not that I'm aware of.
 10:44:49 **17** Q. Have any nationally or internationally
 10:44:51 **18** renowned TEM scientists identified MAS as one of the
 10:44:55 **19** best labs in the world for testing talc?
 10:44:58 **20** MR. CIRSCH: Object to form.
 10:45:01 **21** THE WITNESS: I don't know who these
 10:45:03 **22** internationally recognized experts are. We're
 10:45:06 **23** just following a standard protocol to analyze
 10:45:09 **24** talc using the most appropriate sensitivities
 10:45:14 **25** for analytical sensitivities.
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10:45:16 **1** Q. (By Mr. Chachkes) So you're not aware of
 10:45:17 **2** any TEM scientists who's not taking plaintiff
 10:45:23 **3** lawyers' money who has recognized MAS as one of the
 10:45:26 **4** best labs in the world for testing talc?
 10:45:29 **5** MR. CIRSCH: Object to form.
 10:45:31 **6** THE WITNESS: I don't recall any TEM
 10:45:33 **7** analyst being paid by plaintiffs' attorneys or
 10:45:37 **8** any TEM analyst paid by defense attorneys that
 10:45:38 **9** are calling me and saying good job, Bill.
 10:45:41 **10** Q. (By Mr. Chachkes) Have any nationally or
 10:45:45 **11** internationally renowned PLM scientists identified
 10:45:47 **12** MAS as one of the best labs in the world for testing
13 talc?
 10:45:48 **14** MR. CIRSCH: Object to form.
 10:45:50 **15** THE WITNESS: I don't know who these
 10:45:52 **16** internationally renowned PLM labs are. I do
 10:45:55 **17** believe we're -- because of how we've enhanced
 10:45:59 **18** the PLM method that we are one of the better
 10:46:04 **19** labs because of the time and effort we put into
 10:46:06 **20** the analysis. Sort of along the lines of the
 10:46:10 **21** proposed PLM method by the FDA in 1973, I think
 10:46:14 **22** they said it was laborious.
 10:46:16 **23** Q. (By Mr. Chachkes) All right. So this is
 10:46:17 **24** not a question about what you believe or what people
 10:46:19 **25** at MAS believe but a question about what third
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28
 10:46:22 **1** parties believe.
 10:46:23 **2** Are there any nationally or
 10:46:25 **3** internationally renowned PLM scientists or any
 10:46:27 **4** scientists, for that matter, who have identified MAS
 10:46:30 **5** as one of the best labs in the world for testing talc
 10:46:33 **6** under PLM?
 10:46:34 **7** MR. CIRSCH: Object to form.
 10:46:35 **8** THE WITNESS: I don't know.
 10:46:35 **9** Q. (By Mr. Chachkes) Have you ever presented
 10:46:37 **10** at any conferences about testing talc by TEM?
 10:46:40 **11** A. Maybe. Not cosmetic talcs, no.
 10:46:48 **12** Q. Okay. When you say maybe, nothing comes
 10:46:51 **13** to mind?
 10:46:51 **14** A. Well, we have been analyzing industrial
 10:46:54 **15** talcs for some time. We have given talks at Johnson
 10:47:00 **16** Conferences in the past; Mr. Hatfield has. Any of
 10:47:01 **17** that data that may have happened, I just don't know.
 10:47:05 **18** Q. Okay. But for conferences that relate to
 10:47:08 **19** testing talc with TEM, sitting here today, you can't
 10:47:11 **20** recall presenting at any such conference?
 10:47:15 **21** MR. CIRSCH: Object to form.
 10:47:17 **22** THE WITNESS: I don't recall.
 10:47:17 **23** Q. (By Mr. Chachkes) Have you ever presented
 10:47:18 **24** at any conference -- sorry, strike that.
 10:47:20 **25** Have you ever been invited to present at
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10:47:23 1 any conferences about testing talc with TEM or PLM?
 10:47:26 2 A. Yes, I was.
 10:47:27 3 Q. Okay. What was that?
 10:47:28 4 A. Bruce Bishop invited me to come debate
 10:47:34 5 Dr. Sanchez at a DRI conference last year.
 10:47:37 6 Q. Okay. So did you actually go to that
 10:47:38 7 conference?
 10:47:38 8 A. No.
 10:47:39 9 Q. And DRI conference, that's a defense bar
 10:47:42 10 conference?
 10:47:42 11 A. Yes, sir. I have participated in those
 10:47:45 12 for a number of times and typically debating one of
 10:47:49 13 the defense experts. And he sent an email, and I
 10:47:56 14 couldn't arrange it in my schedule.
 10:47:57 15 Q. The FDA had a conference in November '18
 10:48:01 16 with Jeff San at the University of Maryland; are you
 10:48:03 17 aware of that?
 10:48:04 18 A. I am.
 10:48:05 19 Q. Were you invited to participate?
 10:48:06 20 A. No.
 10:48:06 21 Q. Are you familiar with Forensic Analytical
 10:48:10 22 Labs?
 10:48:10 23 A. I am.
 10:48:11 24 Q. Would you agree that they are an
 10:48:13 25 independent laboratory?
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30
 10:48:14 1 MR. CIRSCH: Object to form.
 10:48:16 2 THE WITNESS: I don't know what their
 10:48:17 3 background is.
 10:48:19 4 Q. (By Mr. Chachkes) Okay. Have you relied
 10:48:20 5 on their testing of talc for asbestos before?
 10:48:24 6 A. I don't know.
 10:48:25 7 Q. Sitting here today, is there any reason
 10:48:29 8 why you believe you shouldn't be able to rely on
 10:48:31 9 their work?
 10:48:32 10 MR. CIRSCH: Object to form.
 10:48:33 11 THE WITNESS: It depends on the work. I
 10:48:35 12 would have to review what work that
 10:48:37 13 hypothetically you want me to rely on.
 10:48:38 14 Q. (By Mr. Chachkes) Yeah. So I'm just
 10:48:40 15 talking about the laboratory, not necessarily the
 10:48:42 16 nature of the science, which of course you'll always
 10:48:46 17 review; right?
 10:48:46 18 So the nature of the laboratory -- and
 10:48:48 19 sitting here today, is there anything about the
 10:48:50 20 Forensic Analytical Labs laboratory that makes you
 10:48:54 21 suspicious of their work in any way?
 10:48:56 22 A. I don't have an opinion one way or the
 10:48:58 23 other. Typically, for me to say something about any
 10:49:00 24 particular lab, I would have to have some interaction
 10:49:04 25 with that lab over the years.
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10:49:07 1 Q. Now, you issued a supplemental report
 10:49:10 2 January 15, 2019; correct?
 10:49:12 3 A. Yes, sir.
 10:49:12 4 Q. Why? What did it add to or subtract from
 10:49:17 5 the first report?
 10:49:18 6 A. There was typos in the first report.
 10:49:21 7 Also, we talked -- added somewhere, I believe, the
 10:49:25 8 Blount PLM that we did on the -- or talked about it
 10:49:33 9 on the 16 containers that Lee Poye tested.
 10:49:39 10 Q. And those errors that you just referred
 10:49:43 11 to, when did you identify them? Was it after you
 10:49:44 12 issued your January 15 report -- I'm sorry, after you
 10:49:47 13 issued your November 14 report?
 10:49:49 14 A. Yes.
 10:49:49 15 Q. And how did you identify those errors?
 10:49:53 16 A. Reading through it. It was very obvious
 10:49:58 17 to me that J3 was not P3, that I had missed it in a
 10:50:03 18 couple of places.
 10:50:04 19 Q. Okay. So the errors that were identified
 10:50:05 20 and fixed in the January 15 report, they were all
 10:50:08 21 identified by you personally?
 10:50:09 22 A. Either myself or Dr. Rigler. I can't tell
 10:50:12 23 you which one of us fixed the most.
 10:50:15 24 Q. Okay. And referring to these additional
 10:50:19 25 data in the January 15 report, did that testing occur
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32
 10:50:23 1 after November 14, 2018?
 10:50:27 2 A. Yes. I believe so.
 10:50:30 3 Q. And then there's a second supplemental
 10:50:32 4 report dated February 1, 2019; correct?
 10:50:35 5 A. Correct.
 10:50:35 6 Q. Okay. And we discussed that before,
 10:50:38 7 didn't we?
 10:50:38 8 A. Yes, sir.
 10:50:39 9 Q. Do you know why it was not produced until
 10:50:47 10 February 2?
 10:50:48 11 MR. CIRSCH: Object to form.
 10:50:52 12 THE WITNESS: Why it wasn't produced until
 10:50:54 13 February 2?
 10:50:54 14 Q. (By Mr. Chachkes) Yeah.
 10:50:55 15 A. Because that's when I sent it.
 10:50:56 16 Q. Okay. You also produced two reports from
 10:51:04 17 Lee Poye at J3 Resources dated December 12 and
 10:51:09 18 December 21; correct?
 10:51:10 19 A. Correct.
 10:51:10 20 Q. Can you describe what those reports are?
 10:51:11 21 A. XRD of 17 MDL samples -- excuse me -- 19
 10:51:21 22 MDL samples to finish off the MDL samples for XRD
 10:51:26 23 that we were going to test. We didn't test the
 10:51:30 24 Windsor railroad car samples for XRD.
 10:51:33 25 Q. And there's some PLM work in there as
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10:51:35 **1** well?
 10:51:37 **2** **A.** I don't know.
 10:51:39 **3** **Q.** That's okay. We can get back to that.
 10:51:40 **4** Do these samples in Lee Poye's
 10:51:47 **5** supplemental reports relate to -- do they correspond
 10:51:53 **6** to samples in your report?
 10:51:54 **7** **A.** Yes.
 10:51:54 **8** **Q.** How did they -- how can somebody correlate
 10:51:58 **9** the two?
 10:51:59 **10** **A.** Let me see. There should have been a --
 10:52:12 **11** let me get some of this stuff out of the way.
 10:52:15 **12** **Q.** Actually, you know, let's -- here. Let's
 10:52:17 **13** go back to 10.
 10:52:20 **14** Exhibit 10 is the December 12 letter
 10:52:23 **15** from -- this is mine. You've got one in your stack.
 10:52:25 **16** **A.** Oh, do I?
 10:52:26 **17** **Q.** Yes.
 10:52:27 **18** **A.** Okay.
 10:52:32 **19** **Q.** Just the coding system, let's just take
 10:52:34 **20** the first one. M69722-001, do you see on the front
 10:52:40 **21** page?
 10:52:40 **22** **A.** Yes.
 10:52:40 **23** **Q.** Do you know what that refers to? Does
 10:52:42 **24** that coding indicate something to you?
 10:52:44 **25** **A.** It does. I didn't -- we don't have the
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34

10:52:48 **1** key.
 10:52:48 **2** What I do is I make an additional number
 10:52:52 **3** so that the -- Lee Poye essentially gets blind
 10:52:58 **4** samples, and there's supposed to be a key produced
 10:53:00 **5** with that.
 10:53:01 **6** **Q.** Okay. You have a key?
 10:53:02 **7** **A.** I don't have it with me. I thought it was
 10:53:04 **8** attached to the report.
 10:53:05 **9** **MR. CHACHKES:** We ask the plaintiffs to
 10:53:08 **10** produce that key. I don't think we got it.
 10:53:11 **11** **MS. O'DELL:** Okay.
 10:53:15 **12** **Q.** (By Mr. Chachkes) Okay. So have you
 10:53:19 **13** produced all the J3 -- all the data J3 Resources
 10:53:24 **14** generated from the work for you in this case?
 10:53:27 **15** **A.** Yes.
 10:53:27 **16** **Q.** And did you ask them about what kind of
 10:53:31 **17** materials they generated?
 10:53:33 **18** **A.** I mean, other than what they sent me, no.
 10:53:38 **19** **Q.** Okay. So you didn't ask them whether
 10:53:39 **20** there was additional material that they generated but
 10:53:42 **21** just did not provide to you?
 10:53:44 **22** **A.** No, sir. I have dealt with and had XRD
 10:53:48 **23** done by them before in other reports, and this is
 10:53:51 **24** what they provide.
 10:53:52 **25** **Q.** Has anyone at MAS discussed the production
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10:53:56 **1** request in this case with anybody at J3 Resources?
 10:53:59 **2** **A.** No.
 10:53:59 **3** **Q.** What measures do you employ to ensure that
 10:54:02 **4** J3 Resources provides all the data it generated in
 10:54:06 **5** its work for you?
 10:54:07 **6** **MR. CIRSCH:** Object to form.
 10:54:08 **7** **Q.** (By Mr. Chachkes) Actually, strike that.
 10:54:09 **8** I think we have already done that.
 10:54:10 **9** All right. Your lab produced something
 10:54:11 **10** called global particles tables for a number of
 10:54:15 **11** samples. Does that ring a bell?
 10:54:16 **12** **A.** Yes.
 10:54:16 **13** **Q.** Okay. And what are those?
 10:54:21 **14** **A.** That's the raw data for each of the
 10:54:24 **15** particles that were measured and counted.
 10:54:26 **16** **Q.** Okay. And so that's the data underlying
 10:54:30 **17** what you report in your expert reports?
 10:54:33 **18** **MR. CIRSCH:** Object to form.
 10:54:34 **19** **THE WITNESS:** Not in this expert report,
 10:54:35 **20** I'm not relying on it, but in past ones, yes.
 10:54:37 **21** **Q.** (By Mr. Chachkes) Okay. Because those
 10:54:38 **22** are non-MDL samples?
 10:54:41 **23** **A.** Well, they're non-MDL samples. It's not
 10:54:44 **24** so much they're non-MDL samples, but I was under the
 10:54:48 **25** impression that these MDL samples weren't contested
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36

10:54:51 **1** for chain of custody.
 10:54:52 **2** **Q.** Okay. But what I'm asking, though, is the
 10:54:55 **3** global particle tables that you produced in this case
 10:54:58 **4** do not correspond to MDL samples; is that correct?
 10:55:03 **5** **A.** That is correct.
 10:55:04 **6** **Q.** Okay. Are you able to generate a global
 10:55:07 **7** particle table for the MDL samples?
 10:55:10 **8** **A.** We have not analyzed any MDL samples yet
 10:55:13 **9** that I'm aware of.
 10:55:13 **10** **Q.** What about the samples in your reports in
 10:55:16 **11** this case?
 10:55:16 **12** **A.** Well, they're not particle size analysis.
 10:55:20 **13** They're PLM and TEM analysis. Those are specifically
 10:55:25 **14** designed for detection of amphibole asbestos, not
 10:55:31 **15** particle sizing.
 10:55:32 **16** **Q.** Why did you produce the global particle
 10:55:34 **17** tables in this case?
 10:55:35 **18** **MR. CIRSCH:** Object to form.
 10:55:36 **19** **THE WITNESS:** I was asked for it, you
 10:55:39 **20** know, in other cases, so I thought I would just
 10:55:41 **21** produce it here, even though I'm not relying on
 10:55:43 **22** it.
 10:55:46 **23** **Q.** (By Mr. Chachkes) Okay. Do you do talc
 10:55:52 **24** particle size analysis for the MDL?
 10:55:54 **25** **A.** We did not.
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10:55:55 **1** Q. All right. But the data in the global
 10:56:07 **2** particle tables relates to talc particle size?
 10:56:12 **3** A. Yes, sir. All the particles for the talc
 10:56:15 **4** sizes that -- in the -- I guess it was in August 4,
 10:56:22 **5** 2017, or 2018 report, I can't remember.
 10:56:24 **6** Q. Sitting here today, are you aware of any
 10:56:27 **7** relevance that the global particle tables that you
 10:56:30 **8** produced have to the reports you issued in this case,
 10:56:33 **9** the MDL?
 10:56:35 **10** MR. CIRSCH: Object to form.
 10:56:36 **11** THE WITNESS: Again, as I'm stating, I'm
 10:56:38 **12** not relying on it. We did not do any MDL
 10:56:40 **13** particle sizing. May in the future, but we
 10:56:44 **14** haven't done it here, and I'm not relying on the
 10:56:46 **15** report that we issued --
 10:56:47 **16** Q. (By Mr. Chachkes) Okay.
 10:56:49 **17** A. -- in August.
 10:56:50 **18** Q. Did your analyst compare any of the
 10:56:52 **19** particles identified in your MDL report by PLM to
 10:56:59 **20** compare them with a known asbestos reference sample?
 10:57:03 **21** MR. CIRSCH: Object to form.
 10:57:14 **22** THE WITNESS: I don't know. It's not
 10:57:16 **23** something that we typically require analysts to
 10:57:19 **24** do, especially the analyst doing this. He's
 10:57:23 **25** worked for us for almost 30 years; he's a
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38

10:57:26 **1** professional geologist; he's probably analyzed
 10:57:30 **2** tens and tens and tens of thousands of samples.
 10:57:33 **3** He does compare to the appropriate
 10:57:38 **4** information --
 10:57:43 **5** MR. CIRSCH: Let him finish.
 10:57:45 **6** Q. (By Mr. Chachkes) Yeah.
 10:57:46 **7** A. So did he pull out standard anthophyllite
 10:57:47 **8** tremolite? I would have to check.
 10:57:48 **9** Q. So when you say compared to the
 10:57:50 **10** appropriate information, you have no knowledge of
 10:57:52 **11** what that appropriate information is, do you?
 10:57:54 **12** A. Sure I do.
 10:57:54 **13** MR. CIRSCH: Object to form.
 10:57:56 **14** THE WITNESS: The refractive indices, the
 10:58:01 **15** measurement of -- indices, the angle of
 10:58:02 **16** extinction, either oblique or parallel, depend
 10:58:05 **17** on cross polars, the dispersion staining on the
 10:58:08 **18** colors using the Su charts to determine the
 10:58:13 **19** refractive indices, the sign of elongation, or
 10:58:13 **20** the speed.
 10:58:13 **21** Q. (By Mr. Chachkes) So all these --
 10:58:14 **22** A. All the standard mineralogical information
 10:58:16 **23** that a well-seasoned PLM analyst would do.
 10:58:20 **24** Q. So I'm not talking about the data that he
 10:58:23 **25** pulls from looking at samples. I'm talking about
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10:58:26 **1** comparing to a reference sample from some source
 10:58:30 **2** other than something generated by MAS, are you aware
 10:58:33 **3** of any of that?
 10:58:34 **4** MR. CIRSCH: Object to form.
 10:58:36 **5** THE WITNESS: They have all the references
 10:58:38 **6** for all the NIST standards that are routinely
 10:58:41 **7** looked at when we get -- when our lab is audited
 10:58:47 **8** by the NVLAP, they go around and make sure the
 10:58:51 **9** analysts can identify these types of materials.
 10:58:53 **10** So, yes, we have reference materials. You
 10:58:56 **11** know, did they pull it out or not, as I'm
 10:58:59 **12** sitting right here specifically, but they do do
 10:59:01 **13** that periodically. So that's all I can tell
 10:59:05 **14** you.
 10:59:05 **15** Q. (By Mr. Chachkes) Okay. So you have NIST
 10:59:07 **16** samples, but you don't know whether your PLM
 10:59:09 **17** scientist actually compared the PLM work he did in
 10:59:13 **18** this case to those NIST samples for this case?
 10:59:18 **19** A. Specifically for these MDL samples did he
 10:59:23 **20** pull out the standards or just use the standard
 10:59:27 **21** crystallographic information that's specific for the
 10:59:31 **22** identification of these types of amphiboles, I'd have
 10:59:35 **23** to check.
 10:59:36 **24** Q. Okay. So I was asking about the NIST
 10:59:38 **25** standard, and you threw in something else. I just
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40

10:59:41 **1** want to focus on the NIST standard.
 10:59:43 **2** Sitting here today you're not aware that
 10:59:44 **3** your PLM scientist compared his results on the PLM
 10:59:47 **4** for the samples in this case directly to the NIST
 10:59:52 **5** sample -- NIST standards; correct?
 10:59:55 **6** MR. CIRSCH: Object to form.
 10:59:56 **7** THE WITNESS: It's not being aware or not
 10:59:57 **8** aware. It's just a question that I can clear up
 11:00:01 **9** and ask.
 11:00:02 **10** Q. (By Mr. Chachkes) Okay. Did you ask him
 11:00:05 **11** at any point?
 11:00:07 **12** A. No. I typically don't ask 30-year
 11:00:12 **13** seasoned analysts/geologists on any particular
 11:00:15 **14** project. But now that you've asked the question,
 11:00:18 **15** I'll ask.
 11:00:18 **16** Q. Okay. And so you have one analyst doing
 11:00:24 **17** all your PLM work for the MDL samples?
 11:00:25 **18** A. Yes.
 11:00:26 **19** Q. What's his name or her name?
 11:00:27 **20** A. Paul Hess.
 11:00:29 **21** Q. Spell the last name, please.
 11:00:31 **22** A. H-e-s-s.
 11:00:32 **23** Q. Your report doesn't state that there were
 11:00:38 **24** asbestos reference samples used in the PLM analysis;
 11:00:38 **25** correct?
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11:00:43 **1** **A.** No, sir. It's not the type of information
 11:00:45 **2** I would typically put in a report.
 11:00:47 **3** **Q.** Do you know which set of NIST standards
 11:00:53 **4** exist at MAS right now?
 11:00:56 **5** **A.** It is the 1875, I think it is. I have to
 11:01:02 **6** check the numbers on it. It's the standard NIST
 11:01:05 **7** samples that all asbestos labs have or should have.
 11:01:09 **8** **Q.** Do you know when you obtained them?
 11:01:11 **9** **A.** Not as I sit here today.
 11:01:13 **10** **Q.** Did your analyst compare any of the
 11:01:15 **11** particles identified in this report by TEM with any
 11:01:19 **12** known asbestos reference samples?
 11:01:21 **13** **A.** Well, we have analyzed both reference
 11:01:30 **14** tremolite series, anthophyllite series. We have all
 11:01:33 **15** those reference standards, analytical data on the TEM
 11:01:39 **16** walls. I don't think they pulled the reference and
 11:01:43 **17** put them in each and every time, but they routinely
 11:01:47 **18** check reference samples.
 11:01:49 **19** **Q.** Okay. So when you say they check
 11:01:51 **20** reference samples, are you saying you mean that they
 11:01:53 **21** check to whatever's on your reference wall?
 11:01:56 **22** **MR. CIRSCH:** Object to form.
 11:01:57 **23** **THE WITNESS:** Well, no. The reference
 11:01:58 **24** wall is from the reference samples, and we have
 11:02:01 **25** analyzed reference samples in the past
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42

11:02:03 **1** specifically for these J&J cases. And the
 11:02:08 **2** analysts are well trained.
 11:02:10 **3** I don't know how often they need to pull
 11:02:12 **4** out a reference sample in order to identify
 11:02:14 **5** either the anthophyllite solid solution series
 11:02:17 **6** or the tremolite solid solution series.
 11:02:21 **7** **Q.** (By Mr. Chachkes) Let's ask two different
 11:02:23 **8** lines of questions here.
 11:02:24 **9** So you have internal MAS-generated
 11:02:27 **10** reference samples for TEM to identify asbestos; is
 11:02:30 **11** that correct?
 11:02:30 **12** **A.** Yes.
 11:02:31 **13** **Q.** Okay. Did you produce them?
 11:02:34 **14** **MR. CIRSCH:** Object to form.
 11:02:35 **15** **THE WITNESS:** I didn't think it was asked.
 11:02:37 **16** **MR. CHACHKES:** Okay. I would ask the
 11:02:38 **17** plaintiffs produce that, please.
 11:02:40 **18** **Q.** (By Mr. Chachkes) What about reference
 11:02:42 **19** samples generated by third parties, do you have
 11:02:47 **20** those?
 11:02:49 **21** **A.** Reference samples by third parties, you
 11:02:51 **22** will have to -- NIST is a third party.
 11:02:53 **23** **Q.** Okay. So anything else?
 11:02:58 **24** **A.** We have accumulated reference samples now
 11:03:01 **25** from anthophyllite asbestos from Windsor County, and
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11:03:09 **1** I'd have to look at them and see what the validation
 11:03:13 **2** is. We have cummingtonite standards now. We have
 11:03:17 **3** grunerite standards. We have -- I believe we have
 11:03:21 **4** winchite and richterite standards. We have not
 11:03:25 **5** analyzed them yet to the degree where we can put the
 11:03:28 **6** results altogether.
 11:03:28 **7** **Q.** So are these -- so I'm talking about
 11:03:31 **8** reference standards that you can look at those and
 11:03:35 **9** compare to what you're generating in this case. So
 11:03:39 **10** you're saying that there are third-party
 11:03:41 **11** anthophyllite standards that you have that were
 11:03:45 **12** produced by something in Windsor County?
 11:03:48 **13** **MR. CIRSCH:** Object to form.
 11:03:49 **14** **THE WITNESS:** It wasn't produced by
 11:03:50 **15** Windsor County. It was a mineral house that
 11:03:57 **16** sells them. And I have not had an opportunity
 11:04:01 **17** to -- we haven't had an opportunity to look at
 11:04:03 **18** them yet.
 11:04:03 **19** **Q.** (By Mr. Chachkes) That's just the
 11:04:05 **20** mineral, though, right, the raw mineral?
 11:04:07 **21** **MR. CIRSCH:** Object to form.
 11:04:08 **22** **THE WITNESS:** Well, it's fibrous, it's raw
 11:04:11 **23** mineral anthophyllite, raw mineral
 11:04:15 **24** cummingtonite, raw mineral grunerite, raw
 11:04:18 **25** mineral winchite-richterite.
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44

11:04:22 **1** **Q.** (By Mr. Chachkes) Okay. For those
 11:04:22 **2** minerals that you just mentioned, did you obtain from
 11:04:24 **3** a third party a TEM photo of the mineral at issue
 11:04:31 **4** that you can use as a standard to compare what you
 11:04:34 **5** find under your TEM?
 11:04:36 **6** **MR. CIRSCH:** Object to form.
 11:04:38 **7** **THE WITNESS:** No. Typically people don't
 11:04:39 **8** provide that -- or NIST should have -- a TEM lab
 11:04:43 **9** that's looking at standards should have the
 11:04:46 **10** qualifications and training to be able to
 11:04:49 **11** recognize the regulated asbestos types.
 11:04:52 **12** **Q.** (By Mr. Chachkes) Okay. So, now, the
 11:04:54 **13** only third-party TEM photographs that you could use
 11:04:59 **14** as a standard for determining whether what you're
 11:05:03 **15** looking at under your TEM is asbestos, the only one
 11:05:06 **16** you've mentioned so far is NIST; correct?
 11:05:09 **17** **A.** I'm sorry, I misunderstood.
 11:05:10 **18** NIST does not provide you TEM pictures or
 11:05:12 **19** EDS pictures or PLM pictures or any XRD pictures.
 11:05:16 **20** They assume you have the training and capability of
 11:05:19 **21** doing that.
 11:05:19 **22** I'm not aware of any third-party group
 11:05:21 **23** providing photograph standards along with the
 11:05:25 **24** samples.
 11:05:25 **25** **Q.** Okay. So to sum it all up, you do not
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11:05:27 **1** have any third-party TEM photos that you use as
 11:05:33 **2** standards to compare to what you're seeing under the
 11:05:35 **3** TEM?
 11:05:36 **4** MR. CIRSCH: Object to form.
 11:05:37 **5** THE WITNESS: That's correct. No third
 11:05:38 **6** party has sent us TEMs along with their
 11:05:41 **7** standards and say here's a standard with a TEM
 11:05:44 **8** photo and this is what it all looks like.
 11:05:46 **9** Q. (By Mr. Chachkes) Your report also does
 11:05:47 **10** not state that the analyst used asbestos reference
 11:05:52 **11** standards in their TEM analysis; correct?
 11:05:55 **12** A. That is correct. None of our reports do.
 11:05:57 **13** Q. How does your lab distribute samples to
 11:05:59 **14** individual analysts to test? Is it random? Is it
 11:06:02 **15** like some analysts get a certain kind of sample?
 11:06:05 **16** A. It's random.
 11:06:06 **17** Q. Is that the same for J3? Did you give
 11:06:08 **18** them random samples?
 11:06:11 **19** MR. CIRSCH: Object to form.
 11:06:13 **20** THE WITNESS: Random samples. For J3 I
 11:06:15 **21** specifically gave them the samples that we
 11:06:17 **22** wanted XRD done on them.
 11:06:18 **23** Q. (By Mr. Chachkes) Okay. But for your
 11:06:23 **24** individual analyst, nobody's getting like more
 11:06:25 **25** Vermont and someone's getting more China, that kind
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46

11:06:29 **1** of thing?
 11:06:29 **2** A. Not that I'm aware of.
 11:06:30 **3** Q. You didn't give any particular analyst
 11:06:32 **4** like you're getting more bottles from the '50s and
 11:06:36 **5** '60s and someone else is getting something more from
 11:06:38 **6** a later era, that's not happening?
 11:06:40 **7** A. It's fairly random. The analysts don't
 11:06:43 **8** have any knowledge of anything more than the sample
 11:06:47 **9** number. They don't know if it's China or Vermont
 11:06:51 **10** or -- we're not telling them anything other than they
 11:06:54 **11** just get a sample number.
 11:06:55 **12** Q. Who decides which analyst gets which
 11:06:58 **13** bottles?
 11:06:58 **14** A. That's a good question. I guess Victoria
 11:07:08 **15** Panariello does.
 11:07:08 **16** Q. Who is she?
 11:07:09 **17** A. She is the head person in our TEM lab.
 11:07:14 **18** Q. Head person meaning administrative?
 11:07:18 **19** Scientist?
 11:07:18 **20** A. She's a scientist.
 11:07:19 **21** Q. Does she do any analysis herself?
 11:07:21 **22** A. Occasionally.
 11:07:22 **23** Q. Under what instrument?
 11:07:23 **24** A. She's -- she can do both polarized light
 11:07:28 **25** microscopy as well as transmission electron
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11:07:30 **1** microscopy.
 11:07:30 **2** Q. Would you expect two analysts from your
 11:07:34 **3** laboratory, given splits from the same bottle, to
 11:07:38 **4** identify the same asbestos concentration?
 11:07:40 **5** A. You'll never get an exact asbestos
 11:07:50 **6** concentration depending on what level of accessory
 11:07:57 **7** amphibole asbestos is in the sample, but I would not
 11:08:00 **8** expect the exact same.
 11:08:01 **9** Q. What level of variation would you think is
 11:08:05 **10** so great that you would conclude something went
 11:08:08 **11** wrong?
 11:08:10 **12** A. Don't know. I've not seen that variation
 11:08:12 **13** yet for two different samples of the same bottle
 11:08:15 **14** that's been analyzed.
 11:08:16 **15** Q. Okay. Hypothetically, if you split a
 11:08:19 **16** bottle and one analyst found no detectable asbestos
 11:08:22 **17** and another found half a percent by concentration
 11:08:27 **18** asbestos, would you think that was within a
 11:08:30 **19** reasonable margin of error?
 11:08:33 **20** MR. CIRSCH: Object to form.
 11:08:34 **21** THE WITNESS: By TEM?
 11:08:35 **22** Q. (By Mr. Chachkes) Sure, by TEM.
 11:08:37 **23** A. At a half a percent?
 11:08:39 **24** Q. Yeah.
 11:08:39 **25** A. No, that's not acceptable.
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48

11:08:41 **1** Q. Okay. What about one analyst finding no
 11:08:46 **2** detectable asbestos, another finding a quarter of a
 11:08:50 **3** percent?
 11:08:50 **4** MR. CIRSCH: Object to form.
 11:08:51 **5** Q. (By Mr. Chachkes) Is that an acceptable
 11:08:52 **6** margin of error?
 11:08:53 **7** A. .25 percent by weight? A quarter percent?
 11:08:59 **8** Q. No, no. A quarter of a percent.
 11:09:02 **9** MR. CIRSCH: Object to form.
 11:09:03 **10** THE WITNESS: Isn't that .25? Isn't that
 11:09:05 **11** a quarter of a percent?
 11:09:09 **12** Q. (By Mr. Chachkes) Yeah.
 11:09:09 **13** A. Sometimes simple math gets the better of
 11:09:13 **14** me.
 11:09:14 **15** I would think that would be unacceptable;
 11:09:16 **16** something has gone wrong.
 11:09:18 **17** Q. Just to spare me from the trouble of doing
 11:09:20 **18** this all day, at what point would you say, you know,
 11:09:23 **19** that's acceptable, and maybe a little larger wouldn't
 11:09:26 **20** be acceptable?
 11:09:26 **21** MR. CIRSCH: Object to form.
 11:09:27 **22** THE WITNESS: I'd have to look at every
 11:09:29 **23** situation to see what that percentage is before
 11:09:31 **24** I could say what is acceptable and not
 11:09:34 **25** acceptable.
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11:09:35 **1** Q. (By Mr. Chachkes) Okay. You have no
11:09:39 **2** written or decided standard in your laboratory for
11:09:42 **3** what kind of error between two analysts is acceptable
11:09:45 **4** or not acceptable, do you?
11:09:47 **5** MR. CIRSCH: Object to form.
11:09:48 **6** THE WITNESS: Yeah, we do. We have
11:09:49 **7** measured where they have gone in and analyzed
11:09:52 **8** the same sample. See, when you were asking for
11:09:53 **9** what's acceptable and not acceptable, it's not
11:09:56 **10** so much on the analyst's side. It could be the
11:09:58 **11** preparation side. It could be a number of
11:10:01 **12** things.
11:10:02 **13** So we have done error rates for the
11:10:06 **14** analyst by TEM analysis where they go in and we
11:10:10 **15** know that in these many grid openings there's
11:10:12 **16** this many fibers, and then we can have them
11:10:15 **17** analyze the same grid openings.
11:10:17 **18** You're taking out the part about the
11:10:19 **19** sample preparation, the filter preparation. So
11:10:22 **20** you have to look at it individually. But for
11:10:24 **21** error rates for the analyst, we have that.
11:10:27 **22** Q. (By Mr. Chachkes) Okay. But just
11:10:29 **23** comparing -- just visually comparing a grid, a single
11:10:32 **24** grid; correct?
11:10:33 **25** MR. CIRSCH: Object to form.
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50

11:10:35 **1** THE WITNESS: Grid openings --
11:10:35 **2** Q. (By Mr. Chachkes) Yeah.
11:10:36 **3** A. -- where each analyst is told to count the
11:10:39 **4** same grid opening and, therefore, you can determine
11:10:43 **5** what the analyst -- what the coefficient of variation
11:10:48 **6** is.
11:10:49 **7** If you have a sample where -- you take two
11:10:52 **8** samples and one sample is -- they found one fiber in
11:10:54 **9** a hundred grid openings and another sample they found
11:10:57 **10** zero, that's within the -- that's within the margin
11:11:00 **11** of error. That's acceptable.
11:11:02 **12** If you have a sample where one analyst
11:11:04 **13** found 50 fibers and one analyst found none or one,
11:11:10 **14** then something has happened, and you have to go back
11:11:12 **15** and look and go, okay, are the grid openings you
11:11:14 **16** looked at he looked at in the first one. So there is
11:11:17 **17** a process that we have to evaluate all data where we
11:11:22 **18** have multiple samples of the same container.
11:11:24 **19** Q. Sample preparation is extremely important
11:11:27 **20** because that affects the --
21 (Cell phone rings.)
22 Q. (By Mr. Chachkes) Okay. Sample
23 preparation is extremely important because that
11:11:50 **24** affects the outcomes; correct?
11:11:53 **25** MR. CIRSCH: Object to form.
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11:11:54 **1** THE WITNESS: All sample preparation is
11:11:55 **2** important.
11:11:55 **3** Q. (By Mr. Chachkes) And do all your
11:11:56 **4** analysts use the same sample preparation methods?
11:12:01 **5** A. All the people who -- the folks who
11:12:06 **6** prepare the samples use the method that is
11:12:10 **7** appropriate for the analysis that's going to be done.
11:12:13 **8** Q. If there is -- for all the samples that
11:12:18 **9** were analyzed in your report, were they prepared --
11:12:22 **10** the sample preparation, were they all done by the
11:12:25 **11** same method?
11:12:26 **12** A. Yes.
11:12:26 **13** Q. Were they all done by the same person?
11:12:28 **14** A. I would have to look. But yes. Most
11:12:31 **15** likely these samples were all done by the same
11:12:34 **16** person.
11:12:34 **17** Q. Okay. If you took a split from a single
11:12:41 **18** bottle and you had two analysts look at it, would you
11:12:44 **19** expect them to identify the same kinds of asbestos,
11:12:47 **20** assuming there was asbestos spotted?
11:12:49 **21** MR. CIRSCH: Object to form.
11:12:52 **22** THE WITNESS: Not necessarily, no.
11:12:53 **23** Q. (By Mr. Chachkes) Okay. So one could say
11:12:54 **24** I see tremolite and another could say I see
11:12:57 **25** anthophyllite and you don't think that is -- that
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52

11:13:01 **1** demonstrates a problem?
11:13:03 **2** MR. CIRSCH: Object to form.
11:13:04 **3** THE WITNESS: If the chemistry is right,
11:13:08 **4** the -- and they have identified it correctly,
11:13:11 **5** no. Many of these samples have two types of
11:13:16 **6** asbestos in it.
11:13:16 **7** Q. (By Mr. Chachkes) Okay. Is there any
11:13:22 **8** situation where you think an analyst has identified
11:13:26 **9** an asbestos that you believe maybe there's an error
11:13:30 **10** there?
11:13:32 **11** MR. CIRSCH: Object to form.
11:13:33 **12** THE WITNESS: I haven't run across
11:13:34 **13** anything like that, no.
11:13:35 **14** Q. (By Mr. Chachkes) And if one -- if there
11:13:36 **15** was a split and one analyst said I found -- let's say
11:13:39 **16** there was a split three ways, and one of your
11:13:42 **17** analysts said I found anthophyllite, another analyst
11:13:45 **18** said I found tremolite, and a third analyst said I
11:13:49 **19** found nothing detectable, you would not say maybe
11:13:52 **20** there's a problem here?
11:13:53 **21** MR. CIRSCH: Object to form.
11:13:54 **22** THE WITNESS: Unless I could review the
11:13:55 **23** data and -- you know, it's an interesting
11:13:56 **24** hypothetical. I don't think we have run across
11:13:58 **25** that interesting hypothetical.
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11:13:59 **1** But I would have to review the data to see
11:14:02 **2** what they're analyzing, what the chemistry is,
11:14:05 **3** how did they identify, and how many asbestos
11:14:09 **4** fibers the two that found it versus the one that
11:14:12 **5** didn't. So it's --
11:14:14 **6** Q. (By Mr. Chachkes) Okay.
11:14:14 **7** A. -- you just can't say is this a problem,
11:14:18 **8** this -- maybe, maybe not.
11:14:20 **9** Q. Okay. So there is a situation you would
11:14:22 **10** say there is not a problem where three analysts
11:14:25 **11** looking at the same bottle finding -- one found
11:14:29 **12** anthophyllite, one found tremolite, one found nothing
11:14:31 **13** detectable, there is a situation where that would not
11:14:33 **14** be a problem, you can imagine that?
11:14:35 **15** MR. CIRSCH: Object to form.
11:14:35 **16** THE WITNESS: I don't know if I can
11:14:37 **17** imagine any of this happening, but it's your
11:14:40 **18** hypothetical. Unless I can look at the data and
11:14:44 **19** understand what each of the analysts were
11:14:46 **20** counting, how many structures, what is the
11:14:48 **21** chemistry, what is the diffraction patterns, is
11:14:51 **22** it the two analysts found one and one found
11:14:54 **23** zero, is this -- you know, what is the mine this
11:14:58 **24** is coming from, how does our other data look --
11:15:01 **25** there's a lot involved there than just saying
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54
11:15:03 **1** off the cuff, oh, that's a problem or that's not
11:15:05 **2** a problem.
11:15:06 **3** Q. (By Mr. Chachkes) Okay. All right. I've
11:15:08 **4** asked you whether you can imagine a situation where
11:15:11 **5** that's not a problem. You have not provided that to
11:15:13 **6** me. This is -- I'll just ask it one more time. Can
11:15:16 **7** you provide that to me? I can imagine that's not a
11:15:18 **8** problem.
11:15:18 **9** MR. CIRSCH: Object to form. I think he
11:15:20 **10** answered your question.
11:15:21 **11** THE WITNESS: I can't give you any
11:15:22 **12** additional information about that because I
11:15:25 **13** don't -- as a scientist I just don't like to
11:15:27 **14** say, well, this is -- I can imagine a problem
11:15:30 **15** here, I can't imagine it's a problem, without
11:15:32 **16** looking at any data to see how many asbestos
11:15:34 **17** fibers each of the analysts counted, is it one,
11:15:37 **18** is it ten, is it five, what's the chemistry look
11:15:40 **19** like, the EDXA, the SAED. I would have to
11:15:47 **20** review it to see if it's a problem or not.
11:15:49 **21** Q. (By Mr. Chachkes) Is there sufficient
11:15:50 **22** subjectivity in the system such that it could be
11:15:52 **23** correct that one analyst could find in a bottle
11:15:55 **24** tremolite and another analyst could find in the
11:15:57 **25** bottle anthophyllite?
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11:15:58 **1** MR. CIRSCH: Object to form.
11:16:00 **2** THE WITNESS: I don't think it's
11:16:01 **3** subjectivity. I just think it's wherever the
11:16:05 **4** cosmetic talc source was in any particular mine,
11:16:09 **5** what's there. We have many samples that have
11:16:12 **6** both types of asbestos in it.
11:16:14 **7** So you can't say, well, you found this and
11:16:18 **8** the other one found that, when the source, the
11:16:21 **9** accessory -- amphibole asbestos accessory
11:16:23 **10** mineral in these mines have both types.
11:16:26 **11** Q. (By Mr. Chachkes) If one of your
11:16:27 **12** scientists looked at a J&J bottle of talc and found a
11:16:32 **13** particular concentration of a particular kind of
11:16:36 **14** asbestos, would you -- do you believe to within a
11:16:42 **15** scientific -- a degree of scientific -- reasonable
11:16:45 **16** scientific degree of certainty that a second
11:16:50 **17** scientist following proper procedures would find the
11:16:52 **18** same?
11:16:52 **19** MR. CIRSCH: Object to form.
11:16:53 **20** THE WITNESS: I think we already talked
11:16:54 **21** about this. I would never expect a second
11:16:56 **22** scientist or a second analyst going in with a
11:16:59 **23** separate prep sample finding the exact amount.
11:17:00 **24** And again, it depends on how many is there.
11:17:03 **25** We did discuss this once. If it's one or
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56
11:17:05 **1** two and the second analyst found none, that's in
11:17:08 **2** the margin of error, or it's looking for the
11:17:12 **3** needle in the haystack sort of analogy.
11:17:15 **4** If one analyst found 50 and the other
11:17:18 **5** found zero, yes, that's a problem, like we
11:17:19 **6** already discussed. Again, I would have to look
11:17:21 **7** at the data to determine if it's a problem or
11:17:23 **8** not.
11:17:24 **9** Q. (By Mr. Chachkes) Do you believe it's
11:17:26 **10** appropriate, given this margin of error, to run
11:17:30 **11** multiple tests on a single bottle and then average
11:17:33 **12** the results to get what would be the correct answer?
11:17:37 **13** MR. CIRSCH: Object to form.
11:17:38 **14** THE WITNESS: I don't think that's
11:17:39 **15** necessary. I think the -- we can accept what
11:17:42 **16** the analysis is. It comes from a sample in a
11:17:45 **17** bottle. The more you run, you may go from
11:17:50 **18** nondetect initially to detect in the second or
11:17:54 **19** third. But I don't think that is necessary to
11:17:56 **20** do for the types of analysis we're doing.
11:17:59 **21** Q. (By Mr. Chachkes) For two of your
11:18:02 **22** analysts analyzing the same bottle, what degree of
11:18:06 **23** difference in the detected percentage of fibers
11:18:10 **24** versus detected percentage of bundles would you
11:18:17 **25** expect normally?
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11:18:19 **1** MR. CIRSCH: Object to form.
 11:18:20 **2** THE WITNESS: I don't have any
 11:18:21 **3** expectations. The analyst is ultimately making
 11:18:24 **4** the decision if it is a single fiber or a
 11:18:28 **5** bundle. Because he's looking in the microscope,
 11:18:31 **6** he's the one who can -- you're looking through
 11:18:34 **7** the fiber, he's the one doing the -- he can
 11:18:38 **8** change the focal plane, he can change from dark
 11:18:42 **9** field to bright field, so ultimately he's making
 11:18:44 **10** the decision on it.
 11:18:46 **11** Q. (By Mr. Chachkes) I am asking really what
 11:18:49 **12** is the margin of error in detecting fiber versus
 11:18:53 **13** bundle percentage, acceptable margin of error. Have
 11:18:57 **14** you ever figured that out?
 11:18:58 **15** A. We haven't done that; it's really not
 11:19:00 **16** necessary. It's more important for coefficients of
 11:19:04 **17** variation. I've reviewed all the photographs of
 11:19:07 **18** fibers and bundles. I would say 95, 98 percent of
 11:19:14 **19** them I agree with. There's a couple percent in there
 11:19:18 **20** that you have to leave it up to the analyst to make
 11:19:21 **21** that decision.
 11:19:22 **22** Q. Would you expect an analyst in your lab
 11:19:25 **23** and an analyst in Lee Poye's lab to get the same
 11:19:29 **24** results for a particular bottle? Is it the same
 11:19:32 **25** answer as I've been getting with two analysts in your
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58

11:19:34 **1** lab?
 11:19:34 **2** MR. CIRSCH: Object to form.
 11:19:36 **3** THE WITNESS: Yes. I would expect,
 11:19:38 **4** depending on what the count is or how many
 11:19:41 **5** fibers, if it's not in the margin of error, that
 11:19:44 **6** we would verify that it's same bottle as
 11:19:47 **7** positive. But other than that, I would have to
 11:19:51 **8** see the data to see.
 11:19:52 **9** Q. (By Mr. Chachkes) When you say -- when
 11:19:55 **10** you say it's not within the margin of error, what's
 11:19:58 **11** the quantification of that margin of error?
 11:20:00 **12** A. I think our analysts have a margin of
 11:20:02 **13** error on coefficient of variation somewhere in the 6
 11:20:03 **14** to 7 percent range. So one lab finding one fiber or
 11:20:07 **15** maybe two fibers, another lab finding zero or finding
 11:20:10 **16** four, I don't have any issue with that.
 11:20:14 **17** Q. Would you expect the samples, the various
 11:20:23 **18** bottles from a single mine, like all the bottles from
 11:20:26 **19** J&J talc from Vermont, cosmetic talc from the Vermont
 11:20:31 **20** mine, to have roughly the same EDS spectra?
 11:20:36 **21** MR. CIRSCH: Object to form.
 11:20:38 **22** THE WITNESS: Depending on the type of
 11:20:39 **23** asbestos, yes.
 11:20:39 **24** Q. (By Mr. Chachkes) Okay. By the way, I've
 11:20:43 **25** seen EDXA; I've seen EDS. Do you use those
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11:20:48 **1** synonymously in your report?
 11:20:50 **2** A. I think all ours say EDXA. EDS is old
 11:20:54 **3** school. They're both the same technique: energy
 11:20:56 **4** dispersive spectroscopy or energy dispersive x-ray
 11:21:00 **5** spectroscopy.
 11:21:00 **6** Q. Do you expect all the samples from a
 11:21:01 **7** single mine, for example, the cosmetic talc from
 11:21:08 **8** J&J's Vermont mine, to have similar SAED patterns?
 11:21:15 **9** A. Depending on the orientation of the
 11:21:18 **10** crystal and depending on what the material is.
 11:21:22 **11** Tremolite, winchite, richterite,
 11:21:27 **12** actinolite typically have similar, but the
 11:21:30 **13** anthophyllite solid solution series, especially from
 11:21:34 **14** Vermont where you can have no iron, iron-rich,
 11:21:38 **15** cummingtonite, high-iron cummingtonite, and actually
 11:21:43 **16** going to grunerite, those will have different
 11:21:46 **17** reflections because you're going from orthorhombic to
 11:21:49 **18** monoclinic.
 11:21:50 **19** Q. So would you expect all the samples from a
 11:21:53 **20** single mine to have the same concentration of
 11:21:57 **21** asbestos?
 11:21:58 **22** A. No.
 11:21:59 **23** Q. Why not?
 11:22:00 **24** A. Because you're dealing with accessory
 11:22:02 **25** minerals. It just depends on where it's being dug
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60

11:22:07 **1** out of the mine.
 11:22:07 **2** Q. Would you expect all the samples from a
 11:22:10 **3** single mine to have the same fiber versus bundle
 11:22:14 **4** ratio?
 11:22:15 **5** A. Not necessarily. All these materials are
 11:22:18 **6** milled, and you're dealing with an asbestos type
 11:22:21 **7** tremolite-anthophyllite that's brittle. So I don't
 11:22:26 **8** know if I would expect to see the same bundles to
 11:22:30 **9** fibers.
 11:22:30 **10** And of course you're also dealing with the
 11:22:33 **11** microscopist who has to make that final decision, the
 11:22:36 **12** TEM microscopist, if it's a single fiber or bundle.
 11:22:40 **13** What we try to make sure happens is that
 11:22:44 **14** every asbestos fiber or bundle we identify meets the
 11:22:49 **15** counting criteria for a regulated asbestos fiber or
 11:22:53 **16** bundle as per the TEM methods, both ISO, ASTM.
 11:22:59 **17** That's the most important thing.
 11:23:01 **18** And then we try to also get some
 11:23:03 **19** consistency on whether it's bundles or fibers. But
 11:23:08 **20** that's what we strive for, is following the protocol,
 11:23:12 **21** following the standard counting rules, and
 11:23:15 **22** identification.
 11:23:16 **23** Q. Hypothetically, if one of your researchers
 11:23:21 **24** analyzed 150 different samples from a single mine and
 11:23:25 **25** another researcher analyzed those same 150 samples,
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11:23:29 1 would you expect the averages for both the
11:23:31 2 researchers to be the same?
11:23:33 3 MR. CIRSCH: Object to form.
11:23:34 4 THE WITNESS: I don't know. I'd have
11:23:35 5 to -- I mean, again, you have to look at the
11:23:37 6 data and determine what that percentage is for
11:23:41 7 those exact same samples and what they found
11:23:43 8 versus the other.
11:23:45 9 I wouldn't be surprised if they're in the
11:23:47 10 range of an average or in the range of high to
11:23:49 11 low. If it's not in that range, then I would
11:23:52 12 have to look at it to see if it's a problem or
11:23:54 13 not.
11:24:03 14 Can we go off the record for a second?
11:24:07 15 MR. CIRSCH: Sure.
11:24:11 16 (Recess from 11:24 a.m. to 11:39 a.m.)
11:39:52 17 Q. (By Mr. Chachkes) Dr. Longo, there are
11:40:50 18 bottles of J&J talc, cosmetic talc, where you've not
11:40:56 19 detected asbestos; correct?
11:40:58 20 A. That's correct.
11:40:58 21 Q. So for example, there are some bottles of
11:41:02 22 Vermont sourced J&J talc where you've not detected
11:41:06 23 asbestos; correct?
11:41:07 24 A. That is correct. The better way to say
11:41:09 25 that is the asbestos, if present, is below our
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62
11:41:12 1 detection limit.
11:41:13 2 Q. Okay. Do you have any opinion as to
11:41:21 3 whether, if one of those bottles were retested,
11:41:23 4 whether you would get the same result?
11:41:25 5 MR. CIRSCH: Object to form.
11:41:27 6 THE WITNESS: And again, this is -- the
11:41:29 7 same result is either zero or nondetect below
11:41:33 8 our detection limit or possibly one right at the
11:41:36 9 detection limit, and I think we've had samples
11:41:38 10 like that before.
11:41:40 11 I think I can think of either Krystal
11:41:45 12 Kim's two samples and Joanne Anderson's two
11:41:50 13 samples, I believe one was positive and one was
11:41:53 14 negative, but they were two different bottles.
11:41:57 15 Where we have tested the two samples from
11:42:01 16 the same bottle would be the 1978 historical,
11:42:05 17 and we found them in both.
11:42:07 18 Q. (By Mr. Chachkes) Okay. I'm not asking
11:42:08 19 about specific bottles. So listen to the question
11:42:11 20 I'm asking.
11:42:12 21 If you had a nondetect on a bottle of J&J
11:42:16 22 cosmetic talc for asbestos, would you expect,
11:42:21 23 generally speaking, that if you ran the same test
11:42:23 24 again, you would get the same result, the non-deduct?
11:42:28 25 MR. CIRSCH: Object to form.
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11:42:29 1 THE WITNESS: I don't have any
11:42:30 2 expectations one way or the other, and I think
11:42:32 3 we've gone over this. This is the hypothetical
11:42:34 4 if we analyzed it again, are we going to find
11:42:36 5 the same thing. It depends on, again, how many
11:42:39 6 asbestos fibers or bundles were detected the
11:42:41 7 first time.
11:42:41 8 If we detect one or two the first time and
11:42:44 9 do it again and it's zero, that's within the
11:42:46 10 error rate that you would expect. Or if we
11:42:49 11 tested again and we find that it's even more,
11:42:53 12 say three fibers or four fibers.
11:42:56 13 So you have to look at specifically on
11:42:58 14 what the first test is, and we're assuming the
11:43:02 15 first test now is a nondetect, below our
11:43:05 16 detection limit. And if the second test shows
11:43:07 17 that there is one or two regulated asbestos
11:43:10 18 fibers, that wouldn't surprise me.
11:43:12 19 Q. (By Mr. Chachkes) Okay. So let me ask
11:43:15 20 the question again because you really answered a
11:43:16 21 different question.
11:43:17 22 The question is, if you had a bottle of
11:43:19 23 J&J talc where you had a nondetect. I'm not asking
11:43:23 24 what your experience is. I'm not asking about a
11:43:25 25 specific bottle. I'm asking just generally speaking,
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64
11:43:29 1 would you expect to have another nondetect if you
11:43:32 2 were to test it again -- nondetect in the first
11:43:36 3 instance?
11:43:37 4 MR. CIRSCH: Object to form.
11:43:38 5 THE WITNESS: I don't have an expectation
11:43:39 6 one way or the other. The results are what they
11:43:41 7 are.
11:43:41 8 Q. (By Mr. Chachkes) Can you make any
11:43:42 9 assumptions about a bottle of J&J cosmetic talc from
11:43:47 10 Vermont about the asbestos content without analyzing
11:43:49 11 the bottle?
11:43:50 12 A. I don't believe you can predict just how
11:43:57 13 much asbestos is in any particular bottle without
11:44:00 14 analyzing it.
11:44:02 15 Q. What about the possibility that there's no
11:44:05 16 asbestos, can you -- if you haven't analyzed a bottle
11:44:10 17 of J&J talc sourced from Vermont, is it possible that
11:44:15 18 there's no detectable asbestos?
11:44:18 19 MR. CIRSCH: Object to form.
11:44:19 20 THE WITNESS: Again, I don't have
11:44:21 21 expectations one way or the other. It's either
11:44:25 22 going to be above, at, or below our detection
11:44:28 23 limit, depending on the amount of regulated
11:44:30 24 asbestos that's in that bottle.
11:44:31 25 Q. (By Mr. Chachkes) You're not assuming
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11:44:32 **1** that a nondetect of a J&J bottle of cosmetic talc is
 11:44:38 **2** an incorrect result; correct?
 11:44:40 **3** **A.** I'm sorry, could you repeat that?
 11:44:41 **4** **Q.** Yeah, I didn't do you a favor there, did
 11:44:44 **5** I?
 11:44:47 **6** You don't believe that a nondetect for
 11:44:49 **7** asbestos on a J&J bottle of cosmetic talc means
 11:44:53 **8** you've made an error?
 11:44:55 **9** **MR. CIRSCH:** Object to form.
 11:44:56 **10** **THE WITNESS:** No. It only means that if
 11:44:59 **11** there is regulated asbestos present in that
 11:45:01 **12** bottle, it's below our analytical detection
 11:45:06 **13** limit.
 11:45:07 **14** **Q.** (By Mr. Chachkes) Your report includes
 11:45:10 **15** EDXA spectra for several particles; correct?
 11:45:13 **16** **A.** For --
 11:45:14 **17** **MR. CIRSCH:** Object to form.
 11:45:15 **18** **THE WITNESS:** For several regulated
 11:45:17 **19** asbestos fibers and bundles, yes.
 11:45:19 **20** **Q.** (By Mr. Chachkes) Describe how your
 11:45:20 **21** analysts calibrate your EDXA system.
 11:45:25 **22** **A.** It's calibrated in the QA/QC, I believe,
 11:45:28 **23** every couple of months where a standard is run and
 11:45:30 **24** then they make a determination on its count rates.
 11:45:34 **25** So whatever we have to do for the National Voluntary
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66

11:45:42 **1** Laboratory Accreditation Program.
 11:45:42 **2** **Q.** Do you keep that data and results on your
 11:45:46 **3** QA/QC?
 11:45:47 **4** **A.** Yes.
 11:45:48 **5** **Q.** Have you ever produced it?
 11:45:49 **6** **A.** No.
 11:45:52 **7** **Q.** How often do they calibrate -- strike
 11:45:57 **8** that.
 11:45:57 **9** Do your analysts compare their EDXA
 11:46:04 **10** spectra to known reference samples, known reference
 11:46:11 **11** spectra?
 11:46:11 **12** **A.** Yes.
 11:46:12 **13** **Q.** And are those spectra from outside MAS or
 11:46:16 **14** generated within MAS?
 11:46:19 **15** **MR. CIRSCH:** Object to form.
 11:46:21 **16** **THE WITNESS:** The reference spectras have
 11:46:24 **17** been generated by MAS.
 11:46:25 **18** **Q.** (By Mr. Chachkes) And do your analysts
 11:46:27 **19** compare their EDXA spectra to any third-party
 11:46:34 **20** reference spectra?
 11:46:42 **21** **A.** Possibly. I mean, there's plenty of
 11:46:47 **22** publications or book chapters in the past on things
 11:46:51 **23** like tremolite, richterite, winchite. Not so much on
 11:46:58 **24** richterite and winchite because it's a mineral that
 11:47:03 **25** nobody seems to have. We believe we have some now,
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11:47:05 **1** but we'll have to check it just to determine the
 11:47:08 **2** sodium concentrations versus the potassium
 11:47:12 **3** concentrations.
 11:47:13 **4** **Q.** Okay. So sitting here today, you don't
 11:47:14 **5** know whether your analysts compare their EDXA spectra
 11:47:17 **6** to third-party standards?
 11:47:19 **7** **A.** No, I didn't say that.
 11:47:20 **8** **MR. CIRSCH:** Object to form.
 11:47:21 **9** **THE WITNESS:** We have our own standards,
 11:47:23 **10** we have the NIST standards. And quite frankly,
 11:47:25 **11** a TEM analyst identifying tremolite and
 11:47:28 **12** anthophyllite or iron-rich anthophyllite is
 11:47:33 **13** almost elementary compared to for people with
 11:47:37 **14** analysts with a lot of experience. We have the
 11:47:40 **15** references.
 11:47:43 **16** If you have any particular issue with any
 11:47:45 **17** particular EDXA spectra that you think has been
 11:47:50 **18** misidentified as one of the regulatory asbestos
 11:47:52 **19** types in these reports, I would be happy to look
 11:47:54 **20** at it and we can discuss it.
 11:47:56 **21** **Q.** (By Mr. Chachkes) I would like you to
 11:47:57 **22** listen carefully to the question.
 11:47:58 **23** The question is: For the EDXA spectra in
 11:48:04 **24** your report, the conclusions made about which mineral
 11:48:06 **25** that is based on the EDX -- which crystal that is
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68

11:48:10 **1** based on the EDXA spectra, was that done comparing
 11:48:14 **2** the spectra to a third-party standard?
 11:48:16 **3** **MR. CIRSCH:** Object to form.
 11:48:17 **4** **THE WITNESS:** Are you asking a third-party
 11:48:19 **5** standard spectra or a third-party standard
 11:48:23 **6** mineral like NIST?
 11:48:26 **7** **Q.** (By Mr. Chachkes) Okay. How about a
 11:48:29 **8** third-party standard, any third-party standard,
 11:48:32 **9** somebody else other than your lab generated this
 11:48:34 **10** spectra, you used that as a standard?
 11:48:36 **11** **A.** I don't know if we've looked at any other
 11:48:39 **12** third-party spectra other than what has been -- I
 11:48:45 **13** think Jim Millette has published in the past. I know
 11:48:48 **14** we have his stuff. I believe McCrone has also. I
 11:48:53 **15** have to look in the particle analysis if they've done
 11:48:56 **16** that. But typically we rely on the actual minerals
 11:48:59 **17** and the spectras that we've generated in the past
 11:49:01 **18** from the standards.
 11:49:02 **19** **Q.** So the question isn't about whether
 11:49:04 **20** third-party standards exist. I'm talking about the
 11:49:07 **21** functional day-to-day your analysts doing an EDXA
 11:49:11 **22** spectra. Sitting there, does he look over at some
 11:49:15 **23** third-party document, or does he look at an MAS
 11:49:19 **24** internal document to determine this is what I'm
 11:49:21 **25** looking at?
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11:49:22 **1** MR. CIRSCH: Object to form.
11:49:23 **2** THE WITNESS: I doubt he's looking at when
11:49:25 **3** he takes a spectra of either tremolite series or
11:49:28 **4** anthophyllite series that he's turning over and
11:49:31 **5** looking at a known reference. These analysts
11:49:34 **6** have been doing this for years and years and
11:49:37 **7** years.
11:49:37 **8** We have references, but I can't imagine
11:49:43 **9** every time he takes an EDX spectra that looks
11:49:47 **10** the same time after time after time that he's
11:49:49 **11** looking at a third-party reference at that
11:49:51 **12** particular point in time.
11:49:52 **13** Q. (By Mr. Chachkes) Okay. How many
11:49:56 **14** different analysts do you have doing EDXA spectra?
11:49:59 **15** A. Four.
11:49:59 **16** Q. Does NIST have an EDXA reference spectra
11:50:06 **17** for the various asbestos?
11:50:11 **18** MR. CIRSCH: Object to form.
11:50:12 **19** THE WITNESS: I think you already asked
11:50:14 **20** that. And besides not having a -- providing a
11:50:16 **21** TEM photo, they do not provide an actual
11:50:22 **22** spectra. But I think most -- I think there's a
11:50:26 **23** number of third-party references I believe just
11:50:28 **24** give you the ratios of what you would see in
11:50:31 **25** EDXA for the magnesium, the silicon, the
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70
11:50:37 **1** calcium, potentially some iron, tremolite, or
11:50:41 **2** actinolite.
11:50:43 **3** Q. (By Mr. Chachkes) Why is EDXA useful?
11:50:47 **4** A. Provides the inorganic, and depending on
11:50:52 **5** your detector, organic chemistry of any particular
11:50:56 **6** elongated particulate.
11:50:58 **7** Q. When you look at an EDXA spectra, do you
11:51:03 **8** assume it's a regulated particle and then look to
11:51:07 **9** which regulated particles have the metal-to-silicon
11:51:11 **10** ratio that correspond?
11:51:14 **11** MR. CIRSCH: Object to form.
11:51:15 **12** THE WITNESS: Well, we typically don't do
11:51:18 **13** an EDX spectra unless it meets the definition of
11:51:22 **14** a regulated -- it has the potential for a
11:51:27 **15** regulated asbestos fiber or bundle.
11:51:29 **16** So it's got to be at least .5 micrometers
11:51:33 **17** in length or greater, it's got to have an equal
11:51:36 **18** to -- greater than or equal to 5-to-1 aspect
11:51:41 **19** ratio, and parallel sides. Then the analyst --
11:51:46 **20** first thing I would assume is do EDXA and check
11:51:50 **21** the chemistry. And then SAED.
11:51:55 **22** Q. (By Mr. Chachkes) If your analyst sees
11:51:58 **23** something that's, what did you say, greater than .55
11:52:04 **24** millimeters?
11:52:05 **25** A. Microns.
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1 Q. Microns, I'm sorry.
11:52:06 **2** A. Micrometers.
11:52:06 **3** Q. Okay. So strike that.
11:52:08 **4** If your analyst sees something that's
11:52:11 **5** greater than .5 micrometers and has an aspect ratio
11:52:14 **6** of at least 5-to-1, then he might do EDXA?
11:52:18 **7** A. If it has parallel sides, yes. And he may
11:52:25 **8** do SAED. It doesn't matter which one. But then he
11:52:29 **9** would have to go through the sequence of determining
11:52:31 **10** if it meets the definition for the regulated asbestos
11:52:35 **11** chemistry and the crystalline structure.
11:52:37 **12** Q. Are there minerals that exist in the world
11:52:40 **13** other than regulated particles, regulated asbestos
11:52:44 **14** particles, that are greater than .5 micrometers and
11:52:50 **15** can have an aspect ratio of greater than 5-to-1?
11:52:53 **16** MR. CIRSCH: Object to form.
11:52:54 **17** Q. (By Mr. Chachkes) And with parallel
11:52:56 **18** sides?
11:52:56 **19** A. Yes.
11:52:56 **20** Q. Potentially dozens if not hundreds; right?
11:53:01 **21** A. I haven't counted them all up. But what
11:53:04 **22** we potentially see is asbestiform talc bundles or
11:53:08 **23** fibers all the time. So, yeah, you have to
11:53:12 **24** distinguish between a talc fiber or bundle and an
11:53:17 **25** anthophyllite fiber or bundle.
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72
11:53:18 **1** Q. The question really is about minerals, so
11:53:20 **2** let's focus on what I've just asked, which is: There
11:53:25 **3** are potentially dozens if not hundreds of minerals
11:53:29 **4** that can have parallel sides, that can have -- be
11:53:34 **5** bigger than .5 micrometers, and have aspect ratios
11:53:37 **6** that are 5-to-1 or greater?
11:53:39 **7** MR. CIRSCH: Object to form.
11:53:40 **8** THE WITNESS: And I apologize, but I just
11:53:42 **9** stated I haven't counted them up. And really,
11:53:46 **10** we're not interested in the hundreds or whatever
11:53:47 **11** it is around the world.
11:53:49 **12** It's primarily what do we find in the talc
11:53:55 **13** deposits that are asbestiform or fibrous and
11:54:00 **14** meet those definitions. And typically the only
11:54:04 **15** thing we routinely see is fibrous talc. Every
11:54:10 **16** now and then an antigorite fiber may show up.
11:54:16 **17** But I don't -- to answer your question you
11:54:19 **18** asked, I haven't counted how many are out there.
11:54:21 **19** Q. (By Mr. Chachkes) Does MAS conduct
11:54:24 **20** qualitative EDS analysis or quantitative EDS
11:54:27 **21** analysis?
11:54:28 **22** A. I believe every spectra in here is
11:54:31 **23** quantitative EDS analysis.
11:54:33 **24** Q. So you actually calculate the peak sizes
11:54:36 **25** and do the math?
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11:54:37 **1** **A.** We can, but we take the raw data, so that
11:54:41 **2** has to have at least 300 seconds of collection. But
11:54:46 **3** it's easy to do. You can actually calculate the
11:54:51 **4** concentration of the oxides under the peaks. We
11:54:54 **5** don't normally do that unless it's necessary.
11:54:58 **6** **Q.** So when you -- just to summarize, when you
11:55:07 **7** do identification of mineral by EDXA, you are
11:55:13 **8** assuming that it's not any of the potentially dozens
11:55:17 **9** or hundreds of other minerals that aren't regulated;
11:55:22 **10** correct?
11:55:22 **11** MR. CIRSCH: Object to form.
11:55:23 **12** THE WITNESS: That's not what I said. I
11:55:24 **13** said I didn't know them all. But there's no
11:55:27 **14** minerals out there that has all the
11:55:29 **15** characteristics of a specific type of a
11:55:32 **16** regulated asbestos fiber, and that's why you go
11:55:36 **17** through the analytical process.
11:55:39 **18** You can get other fibrous materials, but
11:55:42 **19** they'll have aluminum or the
11:55:47 **20** magnesium-to-silicon ratios are off. But you
11:55:50 **21** just don't see that many of these other than
11:55:53 **22** fibrous talc.
11:55:54 **23** So of course we don't make an assumption
11:55:56 **24** what it is. That's why you do the chemistry and
11:55:59 **25** the selected area electron diffraction.

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11:57:08 **1** **A.** I do recognize it.
11:57:10 **2** **Q.** Okay. Now, up at the top it says -- do
11:57:13 **3** you see where it says tremolite?
11:57:14 **4** **A.** Yes.
11:57:14 **5** **Q.** You typed that in, right, or your lab
11:57:17 **6** typed that in?
11:57:19 **7** **A.** After they identified it, yes.
11:57:21 **8** **Q.** Okay. What's the name of the software you
11:57:28 **9** use to generate this spectra?
11:57:31 **10** **A.** You got me there. I don't know the name
11:57:33 **11** of the software. It's whatever the EDS system is on
11:57:37 **12** this particular one. It's not a light element
11:57:39 **13** detector. It comes with the EDXA system. I don't
11:57:44 **14** know what they call their software.
11:57:46 **15** **Q.** Do you run the EDXA yourself?
11:57:49 **16** **A.** Not anymore, no.
11:57:50 **17** **Q.** Did you run any EDXA for any of the
11:57:53 **18** samples in the MDL?
11:58:00 **19** **A.** No, sir.
11:58:00 **20** **Q.** And walk me through how you determine the
11:58:03 **21** chemical composition of a -- what you're looking at
11:58:07 **22** from the spectra.
11:58:10 **23** MR. CIRSCH: Object to form.
11:58:11 **24** THE WITNESS: How far back do you want me
11:58:14 **25** to start?

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11:56:04 **1** **Q.** (By Mr. Chachkes) How many minerals have
11:56:06 **2** the same constituent elements as regulated asbestos?
11:56:13 **3** MR. CIRSCH: Object to form.
11:56:14 **4** THE WITNESS: Don't know.
11:56:14 **5** **Q.** (By Mr. Chachkes) It could be hundreds?
11:56:16 **6** MR. CIRSCH: Object to form.
11:56:17 **7** THE WITNESS: It's not a matter if it has
11:56:19 **8** the same constituents --
11:56:21 **9** **Q.** (By Mr. Chachkes) My question was --
11:56:22 **10** MR. CIRSCH: Hold on. Let him answer the
11:56:24 **11** question, please.
11:56:25 **12** THE WITNESS: I haven't -- again, I
11:56:26 **13** haven't tried to sit down and go through all the
11:56:28 **14** minerals in the world that may have magnesium,
11:56:31 **15** silicon, or magnesium, silicon, and calcium.
11:56:37 **16** What's important is the ratio to the standards
11:56:40 **17** to the chemistry to the selected area electron
11:56:44 **18** diffraction.
11:56:44 **19** MR. CHACHKES: Okay. Let's mark as
11:56:45 **20** Exhibit 12.
11:56:58 **21** (Defendants' Exhibit 12 was marked for
11:56:58 **22** identification.)
11:56:58 **23** **Q.** (By Mr. Chachkes) This is an extracted
11:57:00 **24** page from page 132 of your report. Do you recognize
11:57:05 **25** this as one of your EDXA spectra?

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11:58:14 **1** **Q.** (By Mr. Chachkes) Well, let me ask you
11:58:15 **2** this.
11:58:16 **3** **A.** Electrons hit the solid -- electron beam
11:58:20 **4** hits the solid with enough energy to eject elements
11:58:23 **5** out of their orbital.
11:58:26 **6** **Q.** We're not --
11:58:26 **7** **A.** You don't want me to go back that far?
11:58:27 **8** **Q.** No.
11:58:27 **9** **A.** Okay.
11:58:27 **10** **Q.** So you look at the areas of the peaks;
11:58:30 **11** right?
11:58:30 **12** **A.** No, what we -- we look at the peak ratios,
11:58:34 **13** the areas -- you can't look at the areas, but the
11:58:37 **14** peak ratios is what's important here. This is a
11:58:42 **15** typical tremolite with a small amount of iron, so
11:58:44 **16** this would not be enough iron to get into the
11:58:46 **17** actinolite range. There's no potassium. I don't see
11:58:52 **18** much of a sodium peak, so I would call this just
11:58:57 **19** tremolite.
11:58:57 **20** So the electron beam is put on a spot size
11:59:01 **21** onto the bundle or fiber, and the system essentially
11:59:04 **22** is turned on and starts collecting x-rays from the
11:59:08 **23** different energy levels that are consistent with the
11:59:12 **24** different elements.
11:59:12 **25** **Q.** Okay. Let's just focus on you said you

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11:59:15 **1** look at the ratios of the peaks; right?
 11:59:18 **2** MR. CIRSCH: Object to form.
 11:59:19 **3** Q. (By Mr. Chachkes) Am I misstating your
 11:59:21 **4** testimony?
 11:59:21 **5** A. No. I guess I'm trying to understand what
 11:59:24 **6** you're asking. Maybe you should repeat the question.
 11:59:26 **7** Q. Okay. You've got a -- I'm not asking how
 11:59:30 **8** the machine works. I'm asking you how you take this
 11:59:33 **9** result in Exhibit 12 and turn that into a conclusion.
 11:59:38 **10** So I'm asking do you look at the ratio of
 11:59:43 **11** the peak heights -- is that one of the things you
 11:59:47 **12** look at?
 11:59:48 **13** A. Yes.
 11:59:48 **14** Q. Okay. What's the ratio you look at
 11:59:49 **15** specifically?
 11:59:51 **16** MR. CIRSCH: Object to form.
 11:59:52 **17** THE WITNESS: You have a magnesium and
 11:59:54 **18** calcium peak that are pretty close. Typically
 11:59:57 **19** the calcium peak can be a little lower.
 11:59:59 **20** If it's a light element detector, the
 12:00:01 **21** magnesium can be a little higher, the silicon
 12:00:05 **22** will be your primary peak, somewhere in the 25
 12:00:09 **23** to 30 percent of the magnesium for a non-light
 12:00:10 **24** element detector. And the calcium peaks and the
 12:00:15 **25** magnesium peaks are usually very similar in
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78

12:00:17 **1** size.
 12:00:17 **2** And then we look at the amount of iron to
 12:00:20 **3** see if we're going to call it actinolite versus
 12:00:23 **4** tremolite. And not aware of any other minerals
 12:00:27 **5** out there that have those ratios, so that's how
 12:00:34 **6** I call it tremolite.
 12:00:35 **7** Q. (By Mr. Chachkes) When you say ratio,
 12:00:36 **8** what are you doing? You're adding, what, the height
 12:00:38 **9** of the metals to -- for the numerator and then on the
 12:00:43 **10** denominator is the height of the silicon peak?
 12:00:47 **11** A. We're looking at the silicon peak versus
 12:00:49 **12** the magnesium and the calcium peak, and we're looking
 12:00:53 **13** at the magnesium and the calcium peak to determine
 12:00:56 **14** if -- how much they line up together. It could be a
 12:01:00 **15** little higher, it could be lower, but I would call it
 12:01:04 **16** typical tremolite peak.
 12:01:05 **17** Q. And if I --
 12:01:06 **18** A. Tremolite chemistry.
 12:01:08 **19** Q. If I want to go to a third-party source
 12:01:11 **20** that confirms that this is the appropriate way to
 12:01:13 **21** analyze EDXA data, what would you point me to?
 12:01:16 **22** MR. CIRSCH: Object to form.
 12:01:17 **23** THE WITNESS: I'd have to look through the
 12:01:21 **24** protocols, but I believe they give you all the
 12:01:24 **25** ratios and say the AHERA, the ISO. They don't
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12:01:28 **1** give you a peak, but they'll write out what the
 12:01:31 **2** ratio ranges are.
 12:01:33 **3** Q. (By Mr. Chachkes) Okay. And those ratios
 12:01:35 **4** are -- are they simply the peak height, or do they
 12:01:37 **5** take into account the peak area?
 12:01:39 **6** A. Well, the peak height and the peak area
 12:01:43 **7** are consistent. I mean, the peak area is going to --
 12:01:50 **8** the peak height is going to depend on the area,
 12:01:52 **9** because as the area of the peak builds up, that's
 12:01:56 **10** just more counts.
 12:01:57 **11** If you change the chemistry,
 12:01:59 **12** hypothetically, of, say, tremolite, you have added
 12:02:03 **13** more magnesium elements to it, you're going to have
 12:02:07 **14** higher peaks, so they're interrelated.
 12:02:10 **15** Q. Do the standards that you're referring to
 12:02:12 **16** refer to simply peak height or they refer to peak
 12:02:14 **17** area?
 12:02:14 **18** MR. CIRSCH: Object to form.
 12:02:15 **19** THE WITNESS: All the standards in the TEM
 12:02:17 **20** protocols usually typically just give you
 12:02:20 **21** ratios. So I don't -- and if you look in the
 12:02:24 **22** identification, usually they will spell it out,
 12:02:27 **23** like this is the ratio for tremolite, this is
 12:02:29 **24** the ratio for chrysotile, and so on.
 12:02:30 **25** Q. (By Mr. Chachkes) My question is the
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80

12:02:31 **1** ratio of what? Is it ratio of just simply height, or
 12:02:35 **2** is it ratio of peak area?
 12:02:38 **3** A. Peak area and peak height are
 12:02:40 **4** interchangeable. It's not -- the peak area, if
 12:02:44 **5** you're going to calculate the oxides -- the peak
 12:02:51 **6** area -- it's not the peak area.
 12:02:53 **7** Let's make it simple. It's not the peak
 12:02:55 **8** area. It's the peak height.
 12:02:57 **9** Q. Okay. And that's what the standards say,
 12:02:59 **10** peak height?
 12:03:00 **11** MR. CIRSCH: Object to form.
 12:03:01 **12** THE WITNESS: I believe so.
 12:03:01 **13** Q. (By Mr. Chachkes) Okay. And one measures
 12:03:03 **14** that simply -- you just take a ruler and place it
 12:03:06 **15** vertically and you could get a peak height?
 12:03:09 **16** A. Yeah, you could, if you wanted to.
 12:03:11 **17** Q. Okay. Do you actually do that
 12:03:12 **18** quantitatively with numbers, or do you just kind of
 12:03:15 **19** eyeball it?
 12:03:17 **20** MR. CIRSCH: Object to form.
 12:03:18 **21** THE WITNESS: All the analysts would --
 12:03:21 **22** could probably draw that. You know, it's years
 12:03:24 **23** and years' experience. You don't have to take
 12:03:25 **24** the ratios. And if you look at the standards,
 12:03:29 **25** they will look pretty much identical to that.
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12:03:31 **1** But again, you have to be careful if
 12:03:33 **2** you're looking at a windowless detector, which
 12:03:38 **3** is more sensitive for the different elements.
 12:03:39 **4** **Q.** (By Mr. Chachkes) My question is about
 12:03:41 **5** what your analysts actually do. Do they actually
 12:03:43 **6** quantify the heights and run the numbers, or are they
 12:03:46 **7** eyeballing it?
 12:03:49 **8** MR. CIRSCH: Object to form.
 12:03:49 **9** THE WITNESS: I think at this stage of
 12:03:51 **10** their careers they're just visually confirming
 12:03:54 **11** the proper elements and the proper ratios.
 12:03:56 **12** **Q.** (By Mr. Chachkes) And the software can
 12:04:01 **13** generate those numbers; right?
 12:04:04 **14** **A.** The software generates the height? The
 12:04:07 **15** ratios?
 12:04:08 **16** **Q.** Yes.
 12:04:08 **17** **A.** I don't know.
 12:04:09 **18** **Q.** So look at the bottom of Exhibit 12 in the
 12:04:12 **19** bottom left. Do you see how it says magnesium,
 12:04:19 **20** silicon, calcium, iron, down there on the bottom
 12:04:23 **21** left; do you see that?
 12:04:23 **22** **A.** Yes.
 12:04:24 **23** **Q.** You can print out some -- there's data
 12:04:26 **24** that goes there that the software can generate;
25 correct?
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12:05:10 **1** MR. CIRSCH: Object to form.
 12:05:11 **2** THE WITNESS: No. It's just not -- that
 12:05:14 **3** data is just not something I'm relying on for my
 12:05:16 **4** opinions in this case.
 12:05:17 **5** **Q.** (By Mr. Chachkes) And that data being the
 12:05:19 **6** specific numerical representation of the peak
 12:05:23 **7** heights?
 12:05:23 **8** MR. CIRSCH: Object to form.
 12:05:24 **9** THE WITNESS: I believe what that gives
 12:05:25 **10** you is the percentage of one element to the
 12:05:27 **11** other, not peak heights.
 12:05:29 **12** **Q.** (By Mr. Chachkes) You're sure of that?
 12:05:31 **13** MR. CIRSCH: Object to form.
 12:05:32 **14** THE WITNESS: Pretty sure.
 12:05:33 **15** **Q.** (By Mr. Chachkes) Okay. But anyway, you
 12:05:37 **16** didn't produce that data in your report, did you?
 12:05:39 **17** MR. CIRSCH: Object to form.
 12:05:39 **18** THE WITNESS: No, sir. It's not something
 12:05:41 **19** that's required to render my opinions in this
 12:05:43 **20** case --
 12:05:44 **21** **Q.** (By Mr. Chachkes) Okay.
 12:05:45 **22** **A.** -- in this MDL.
 12:05:56 **23** MR. CHACHKES: Let's just mark this as
 12:05:57 **24** Exhibit 13.
 12:05:58 **25** (Defendants' Exhibit 13 was marked for
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82

12:04:29 **1** **A.** That's correct.
 12:04:29 **2** **Q.** Why don't you generate it? Why don't you
 12:04:31 **3** generate it?
 12:04:32 **4** MR. CIRSCH: Object to form.
 12:04:33 **5** THE WITNESS: There's no need to. It's
 12:04:35 **6** not required for this type of analysis to
 12:04:38 **7** identify tremolite.
 12:04:39 **8** **Q.** (By Mr. Chachkes) Do you have that data
 12:04:41 **9** somewhere still saved in a machine somewhere?
 12:04:44 **10** **A.** That, I don't know.
 12:04:45 **11** **Q.** Okay. We are going to request that to be
 12:04:48 **12** produced. I know your machine generates it. So if
 12:04:51 **13** you could see whether you could produce that, we'd
 12:04:54 **14** appreciate it.
 12:04:55 **15** MS. O'DELL: We'll consider your request.
 12:04:58 **16** We're making no commitment we're going to do
 12:05:00 **17** that.
 12:05:00 **18** MR. CHACHKES: Okay.
 12:05:00 **19** **Q.** (By Mr. Chachkes) You don't deliberately
 12:05:01 **20** delete that data, do you?
 12:05:03 **21** MR. CIRSCH: Object to form.
 12:05:04 **22** THE WITNESS: No, sir, I have not
 12:05:05 **23** deliberately deleted that data.
 12:05:07 **24** **Q.** (By Mr. Chachkes) You don't instruct your
 12:05:08 **25** researchers to delete that data, do you?
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84

12:06:15 **1** identification.)
 12:06:16 **2** **Q.** (By Mr. Chachkes) All right. Look on the
 12:06:19 **3** last page of Exhibit 13. There appears to be an EDXA
 12:06:23 **4** spectra; do you see that?
 12:06:24 **5** **A.** I do.
 12:06:25 **6** **Q.** And it appears to be generated by the same
 12:06:29 **7** software as you're using. All the fonts are the
 12:06:31 **8** same; everything appears to be the same. Do you have
 12:06:34 **9** any opinion on that?
 12:06:34 **10** MR. CIRSCH: Object to form.
 12:06:35 **11** THE WITNESS: No.
 12:06:35 **12** **Q.** (By Mr. Chachkes) All that information on
 12:06:38 **13** the lower left-hand corner in the Exhibit 13, you
 12:06:42 **14** could generate that information; right?
 12:06:44 **15** MR. CIRSCH: Object to form.
 12:06:45 **16** THE WITNESS: I don't know if we have the
 12:06:47 **17** same software, same software upgrades, so I
 12:06:50 **18** can't comment on that.
 12:06:51 **19** **Q.** (By Mr. Chachkes) Can you generate that
 12:06:52 **20** information that's down there in the lower left-hand
 12:06:55 **21** corner --
 12:06:55 **22** MR. CIRSCH: Object to form.
 12:06:56 **23** **Q.** (By Mr. Chachkes) -- on Exhibit 13, last
 12:06:57 **24** page?
 12:06:57 **25** **A.** And I don't mean to be disrespectful, but
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12:07:00 **1** I don't know. I don't know if we have the same
 12:07:02 **2** updated software, et cetera, so I can't say one way
 12:07:05 **3** or the other.
 12:07:05 **4** **Q.** Do you know whether the data you have from
 12:07:13 **5** your EDXA runs allows you to calculate numerical
 12:07:20 **6** values for the weight percentage of the elements?
 12:07:23 **7** **A.** I believe I've just already stated I'm
 12:07:27 **8** not -- I don't know what software system we have and
 12:07:31 **9** can it do that or not.
 12:07:32 **10** **Q.** Okay. And same question, so whether you
 12:07:35 **11** can generate the standard definitions or atomic
 12:07:39 **12** percentages or all those other ones, you just don't
 12:07:43 **13** know one way or the other whether you can calculate
 12:07:46 **14** those numbers using your EDXA apparatus?
 12:07:50 **15** **MR. CIRSCH:** Object to form.
 12:07:51 **16** **THE WITNESS:** It may be possible and we
 12:07:52 **17** may be able to. I just don't know until I ask.
 12:08:01 **18** **Q.** (By Mr. Chachkes) Do you know of any
 12:08:06 **19** third-party published source that approves of
 12:08:11 **20** eyeballing EDXA spectra to determine what the
 12:08:14 **21** composition of the material you're looking at?
 12:08:17 **22** **MR. CIRSCH:** Object to form.
 12:08:17 **23** **THE WITNESS:** Yes.
 12:08:18 **24** **Q.** (By Mr. Chachkes) What?
 12:08:18 **25** **A.** All the assessors that ever walked in our
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12:09:19 **1** literature that says eyeballing it is okay?
 12:09:22 **2** **MR. CIRSCH:** Object to form.
 12:09:23 **3** **THE WITNESS:** I wouldn't put it eyeballing
 12:09:26 **4** comparing to the standards and looking at the
 12:09:28 **5** ratios.
 12:09:29 **6** I'm not aware of any peer-reviewed
 12:09:32 **7** literature that makes that affirmative or
 12:09:34 **8** negative statement one way or the other.
 12:09:36 **9** **Q.** (By Mr. Chachkes) But you are aware of
 12:09:37 **10** peer-reviewed literature that uses actual
 12:09:39 **11** quantitative numbers and calculates the kind of
 12:09:43 **12** information we see in Exhibit 13 which is like weight
 12:09:47 **13** percentages; you're aware of that; right?
 12:09:48 **14** **MR. CIRSCH:** Object to form.
 12:09:50 **15** **THE WITNESS:** For this type of analysis
 12:09:52 **16** where you're just confirming, I'm not aware of
 12:09:56 **17** any. Maybe there is. Show some if you have
 12:10:01 **18** one.
 12:10:01 **19** **Q.** (By Mr. Chachkes) So when you say just
 12:10:03 **20** confirming, you're not using EDXA to determine in a
 12:10:08 **21** vacuum what I'm looking at. You've already made some
 12:10:10 **22** assumptions about what you may be looking at?
 12:10:12 **23** **A.** No, we never make assumptions. We do the
 12:10:15 **24** chemistry, and the chemistry is unique. If you go
 12:10:18 **25** through here -- I was just looking at some. You
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12:08:25 **1** lab with the National Voluntary Laboratory
 12:08:26 **2** Accreditation Program do not require anybody to
 12:08:28 **3** measure peak heights and look at ratios for tremolite
 12:08:32 **4** or any of these.
 12:08:35 **5** You may want to make a green analyst who
 12:08:38 **6** hasn't been doing this for a while do that if he has
 12:08:41 **7** some issues, but it's not something that I've ever
 12:08:44 **8** seen the auditors say that is necessary.
 12:08:46 **9** **Q.** Is there any --
 12:08:47 **10** **MR. CIRSCH:** Did you finish your answer?
 12:08:49 **11** **THE WITNESS:** Yes.
 12:08:49 **12** **Q.** (By Mr. Chachkes) Is there any
 12:08:50 **13** peer-reviewed literature that approves of eyeballing
 12:08:54 **14** EDXA patterns to determine the chemical composition
 12:08:57 **15** you're looking at?
 12:08:58 **16** **MR. CIRSCH:** Object to form.
 12:08:59 **17** **Q.** (By Mr. Chachkes) Peer-reviewed
 12:09:00 **18** literature.
 12:09:00 **19** **A.** I don't know of any peer-reviewed
 12:09:02 **20** literature that says that comparing the spectras or
 12:09:07 **21** looking at the spectras and comparing them should not
 12:09:10 **22** be done, that you have to use a ruler for every one
 12:09:13 **23** of them. I'm not aware of any literature that states
 12:09:15 **24** that, peer-reviewed literature.
 12:09:16 **25** **Q.** Not my question. Any peer-reviewed
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12:10:19 **1** know, hornblende. Well, there's no aluminum in
 12:10:23 **2** tremolite. It's fairly straightforward.
 12:10:26 **3** **Q.** Okay. You don't redact the information
 12:10:38 **4** that's in the lower left-hand corner of what's been
 12:10:41 **5** marked as Exhibit 12; right?
 12:10:44 **6** **A.** No.
 12:10:44 **7** **MR. CIRSCH:** Object to form.
 12:10:45 **8** **Q.** (By Mr. Chachkes) And you've never
 12:10:46 **9** redacted that information, have you?
 12:10:48 **10** **MR. CIRSCH:** Object to form.
 12:10:49 **11** **THE WITNESS:** No.
 12:10:49 **12** **Q.** (By Mr. Chachkes) Were they trained not
 12:10:56 **13** to fill in the lower left-hand corner, your analysts?
 12:11:00 **14** **MR. CIRSCH:** Object to form.
 12:11:01 **15** **THE WITNESS:** They weren't trained one way
 12:11:02 **16** or the other. It's not required for our
 12:11:04 **17** certifications. NVLAP does not require you to
 12:11:09 **18** run weight percentages, oxides, or any of that.
 12:11:11 **19** You have to demonstrate your ability to identify
 12:11:16 **20** regulated asbestos.
 12:11:19 **21** We've never had it be suggested that we
 12:11:22 **22** are misidentifying tremolite in any
 12:11:26 **23** circumstance.
 12:11:27 **24** **Q.** (By Mr. Chachkes) All right. So the
 12:11:38 **25** first step in analyzing an EDXA, though, is to
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12:11:41 **1** determine the ratio of the metals to silicon; right?
 12:11:45 **2** **A.** The first step?
 12:11:46 **3** **Q.** Yeah.
 12:11:47 **4** **A.** The first step -- the first step is to
 12:11:50 **5** take the spectra and to verify that it is one of the
 12:11:56 **6** regulated asbestos minerals -- regulated asbestos
 12:12:02 **7** types that is of issue, or any issue, for any of
 12:12:06 **8** them.
 12:12:06 **9** **Q.** Do you conclude you're looking at a
 12:12:09 **10** regulated asbestos prior to doing the ratio analysis?
 12:12:14 **11** **A.** No.
 12:12:15 **12** **Q.** Okay. So prior to determining there's --
 12:12:19 **13** what you're looking at, what kind of mineral you're
 12:12:21 **14** looking at, you determine the ratio of the metals to
 12:12:26 **15** silicon; is that correct?
 12:12:28 **16** **A.** Before anything is done, we take the
 12:12:30 **17** microchemistry of an individual fiber and look at the
 12:12:34 **18** typical elements that you would expect.
 12:12:38 **19** **Q.** You seem to not want to answer about the
 12:12:40 **20** EDXA.
 12:12:41 **21** **MR. CIRSCH:** I don't think he was finished
 12:12:43 **22** answering it.
 12:12:43 **23** **Q.** (By Mr. Chachkes) All right. I'm talking
 12:12:44 **24** about the EDXA.
 12:12:45 **25** **A.** That's what I'm saying.
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12:13:45 **1** **A.** It's hard to prove a negative, but it is
 12:13:48 **2** not one of the look-alikes of that type of ratio
 12:13:52 **3** that's fibrous. And of course we're leaving out the
 12:13:55 **4** SAED to make sure it has an amphibole type
 12:13:59 **5** diffraction pattern.
 12:14:00 **6** **Q.** Prior to any EDXA, you've already
 12:14:04 **7** determined it's an amphibole?
 12:14:05 **8** **A.** No. Nothing is determined about this
 12:14:07 **9** particular structure other than it's fibrous, it
 12:14:15 **10** meets the counting criteria for what would be a
 12:14:19 **11** regulated asbestos fiber if in fact the chemistry in
 12:14:23 **12** the crystalline structure are consistent with the
 12:14:27 **13** appropriate mineral.
 12:14:29 **14** **Q.** Okay. You would agree that two different
 12:14:34 **15** minerals can have similar EDXA readouts; correct?
 12:14:38 **16** **MR. CIRSCH:** Object to form.
 12:14:39 **17** **THE WITNESS:** It depends on what you mean
 12:14:40 **18** by similar. I can't answer that hypothetical.
 12:14:46 **19** **Q.** (By Mr. Chachkes) Okay. So, for example,
 12:14:52 **20** anthophyllite and cummingtonite have similar EDXA
 12:14:56 **21** spectra; correct?
 12:14:57 **22** **A.** That's correct. Anthophyllite, depending
 12:15:01 **23** on the iron content, anthophyllite, cummingtonite,
 12:15:07 **24** two regulated asbestos types, yes, they can have
 12:15:10 **25** similar EDS.
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90

12:12:46 **1** **Q.** So you've got the EDXA result in your
 12:12:50 **2** hands. This result, 12, before you've determined
 12:12:54 **3** what it is, is the first step determining the ratio
 12:12:57 **4** of metals to silicon --
 12:12:59 **5** **MR. CIRSCH:** Object to form.
 12:13:00 **6** **Q.** (By Mr. Chachkes) -- to interpret this
 12:13:01 **7** EDXA?
 12:13:02 **8** **A.** The first step would be to look at this
 12:13:04 **9** EDXA -- and I'm just speaking for me -- and I would
 12:13:07 **10** see that the ratios are consistent with what I would
 12:13:12 **11** expect for tremolite from the standards. That would
 12:13:15 **12** be my first step.
 12:13:17 **13** **Q.** But you don't know whether those ratios
 12:13:20 **14** are consistent with other minerals as well that are
 12:13:22 **15** non-regulated?
 12:13:25 **16** **MR. CIRSCH:** Object to form.
 12:13:26 **17** **THE WITNESS:** I'm not aware of any ratios
 12:13:28 **18** like that for any other non-regulated fibrous
 12:13:31 **19** minerals.
 12:13:33 **20** **Q.** (By Mr. Chachkes) Are you excluding the
 12:13:34 **21** possibility that they exist, or you're saying you're
 12:13:36 **22** just not aware?
 12:13:37 **23** **A.** We've never seen them, so I guess I'm
 12:13:41 **24** excluding the possibility that they exist.
 12:13:44 **25** **Q.** Okay.
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92

12:15:11 **1** **Q.** Okay. When you say EDS, you mean the same
 12:15:16 **2** thing as EDXA?
 12:15:18 **3** **A.** Correct. I'm sorry. I'm old, and that's
 12:15:20 **4** what we learned back in graduate school, it was EDS.
 12:15:24 **5** It's hard for me to go to EDXA.
 12:15:26 **6** **Q.** All right. So you discussed your first
 12:15:27 **7** step is to make some conclusions about what you're
 12:15:28 **8** looking at just by eyeballing it.
 12:15:30 **9** The next step, do you determine the ratios
 12:15:33 **10** of the metals to the silicon?
 12:15:35 **11** **MR. CIRSCH:** Object to form.
 12:15:36 **12** **THE WITNESS:** Well, let's back up here. I
 12:15:38 **13** don't make any conclusions by eyeballing it.
 12:15:41 **14** The first thing we do is look at it and
 12:15:44 **15** say this could match the counting rules for a
 12:15:48 **16** regulated elongated particle.
 12:15:48 **17** It's at least greater than .5 micrometers
 12:15:51 **18** in length. These are measurements. These are
 12:15:53 **19** not eyeballing. It has parallel sides and has
 12:15:56 **20** at least a 5-to-1 aspect ratio or greater.
 12:16:00 **21** Then the EDXA for me is taken to see if it
 12:16:07 **22** is consistent with the ratios and patterns I
 12:16:11 **23** would expect for some -- for the types of
 12:16:13 **24** regulated asbestos fibers we're looking at.
 12:16:15 **25** And we're not saying, okay, we're going to
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12:16:18 **1** eliminate this type or that type. It's
 12:16:21 **2** whatever's present.
 12:16:22 **3** Then the SAED -- so it has a typical
 12:16:25 **4** amphibole diffraction pattern. If it's
 12:16:27 **5** anthophyllite, potentially, we'll rotate the
 12:16:30 **6** stage 10 to 20 degrees to eliminate the
 12:16:33 **7** once-in-a-blue-moon reflection of a fibrous talc
 12:16:37 **8** that some people claim that's close to
 12:16:39 **9** anthophyllite.
 12:16:40 **10** And after all that, then we would -- I
 12:16:43 **11** would say that is a regulated asbestos fiber
 12:16:46 **12** type. It meets all the criteria.
 12:16:49 **13** You keep saying eyeballing. That's not
 12:16:52 **14** really much of a term --
 12:16:54 **15** **Q.** (By Mr. Chachkes) My questions are all
 12:16:55 **16** about --
 12:16:58 **17** MR. CIRSCH: Wait, he's not finished.
 12:16:59 **18** THE WITNESS: Wait. I'm not done.
19 MR. CIRSCH: You cut him off.
20 THE REPORTER: Wait. Wait. Wait.
21 THE WITNESS: What we're doing is we're
 12:17:01 **22** looking at a set criteria. No decisions are
 12:17:02 **23** made ahead of time. Nothing is -- well, I
 12:17:07 **24** believe it's that type of thing. That doesn't
 12:17:08 **25** happen.
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12:18:02 **1** tagged for silicon, magnesium, calcium, iron, or
 12:18:07 **2** whatever it happens to be, and the ratios are
 12:18:09 **3** fairly distinct compared to any other mineral
 12:18:11 **4** that I know out there, unless it's winchite or
 12:18:15 **5** richterite, and then we're looking at a little
 12:18:17 **6** bit of potassium or sodium.
 12:18:21 **7** **Q.** (By Mr. Chachkes) Okay. When you say the
 12:18:21 **8** ratios come up quick, do you mean a precise number
 12:18:23 **9** comes up on some screen?
 12:18:24 **10** **A.** This ratio -- magnesium, silicon, calcium,
 12:18:30 **11** and iron -- is almost instantaneous. The only thing
 12:18:33 **12** that changes as you count, they all simultaneously
 12:18:39 **13** get higher. There is nothing else to it. You look
 12:18:41 **14** at that, you compare to the regulated standards, and
 12:18:46 **15** they all match.
 12:18:47 **16** **Q.** Okay. Looking at Exhibit 12, tell me what
 12:18:50 **17** the ratios are there.
 12:18:54 **18** MR. CIRSCH: Object to form.
 12:18:55 **19** THE WITNESS: Say silicon is 10.
 12:18:59 **20** Magnesium and calcium is approximately 3. The
 12:19:05 **21** iron there would be less than 1.
 12:19:08 **22** **Q.** (By Mr. Chachkes) Okay. And that's how
 12:19:10 **23** you kind of do it in the real world when you're
 12:19:13 **24** analyzing EDXA spectra?
 12:19:16 **25** MR. CIRSCH: Object to form.
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94

12:17:08 **1** **Q.** (By Mr. Chachkes) Let's start again. I'm
 12:17:10 **2** only asking questions about EDXA.
 12:17:12 **3** Can you agree with me not to answer about
 12:17:14 **4** TEM or SAED to the following sets of questions? I
 12:17:19 **5** just want to know how you do EDXA. Can you do that?
 12:17:24 **6** MR. CIRSCH: Object to form.
 12:17:25 **7** THE WITNESS: I've already explained that
 12:17:26 **8** to you.
 12:17:26 **9** **Q.** (By Mr. Chachkes) Okay. But can you
 12:17:27 **10** answer these following questions only referring to
 12:17:28 **11** EDXA? Can you do me that favor?
 12:17:30 **12** **A.** No.
 12:17:31 **13** **Q.** Okay.
 12:17:31 **14** **A.** If I feel that the question needs more
 12:17:33 **15** explanation, an answer needs more explanation, I
 12:17:36 **16** believe that's my right.
 12:17:37 **17** **Q.** Okay. You get the EDXA printout. At what
 12:17:40 **18** point, if at all, do you calculate the ratio of
 12:17:44 **19** metals to silicon for the EDXA?
 12:17:48 **20** MR. CIRSCH: Object to form.
 12:17:49 **21** THE WITNESS: I've already gone over that.
 12:17:50 **22** I can't say anything more.
 12:17:53 **23** If I'm sitting at the TEM, I'm looking at
 12:17:56 **24** the monitor and I'm determining -- and the
 12:17:59 **25** ratios come up fairly quick. We have them
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96

12:19:16 **1** THE WITNESS: In the real world we have
 12:19:17 **2** standards, and after doing it thousands and
 12:19:20 **3** thousands of times, that's how it's done.
 12:19:24 **4** **Q.** (By Mr. Chachkes) Okay. Basically the
 12:19:25 **5** way you just did it, I'm putting aside that you may
 12:19:28 **6** have an encyclopedic knowledge of what to compare the
 12:19:31 **7** ratios to. You generate ratios the way you've just
 12:19:36 **8** done it, you look at it and you just read it and you
 12:19:39 **9** come up with the ratios?
 12:19:41 **10** MR. CIRSCH: Object to form.
 12:19:42 **11** THE WITNESS: I'm not generating ratios.
 12:19:44 **12** The tremolite fiber or bundle is generating the
 12:19:47 **13** ratios by the x-rays that are being generated
 12:19:51 **14** from the electron beam that are being counted at
 12:19:54 **15** specific energies. Those ratios are fairly
 12:19:57 **16** standard.
 12:19:58 **17** What I do is interpret the overall pattern
 12:20:02 **18** and determine how well it matches with the
 12:20:04 **19** tremolite standards that are in each of the TEM
 12:20:07 **20** rooms.
 12:20:07 **21** **Q.** (By Mr. Chachkes) That step in the EDXA
 12:20:11 **22** analysis where you determine the ratios, do you do it
 12:20:15 **23** in the real world like we just saw now, you look at
 12:20:22 **24** the spectra and you say, okay, silicon 10, magnesium,
 12:20:24 **25** calcium 3, iron 1-ish, is that how you do it in the
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12:20:26 **1** real world?
 12:20:27 **2** MR. CIRSCH: Object to form.
 12:20:28 **3** THE WITNESS: In the real world I don't --
 12:20:31 **4** I look at the overall pattern, and the overall
 12:20:35 **5** pattern is unique with the -- then it's an
 12:20:39 **6** amphibole asbestos. And that's how every
 12:20:43 **7** asbestos TEM lab in the country does it.
 12:20:45 **8** Q. (By Mr. Chachkes) Okay. So does the
 12:20:51 **9** ratios of metal to silicon in the EDXA analysis have
 12:20:57 **10** a material impact on your conclusions about what
 12:21:00 **11** you're looking at?
 12:21:02 **12** MR. CIRSCH: Object to form.
 12:21:03 **13** THE WITNESS: The elemental spectras
 12:21:06 **14** always have a material impact on what I'm
 12:21:08 **15** looking at in the EDXA.
 12:21:10 **16** Q. (By Mr. Chachkes) I didn't ask about
 12:21:11 **17** that. I asked about the specific ratio of metals to
 12:21:15 **18** silicon.
 12:21:16 **19** Does that particular numerical ratio have
 12:21:20 **20** a material impact on how you conclude what you're
 12:21:23 **21** looking at under the EDXA?
 12:21:25 **22** MR. CIRSCH: Object to form.
 12:21:26 **23** THE WITNESS: I don't understand the
 12:21:27 **24** question. I think I've answered it over and
 12:21:29 **25** over. I'll answer it one more time.
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12:22:35 **1** and then the iron depends on if we're going to
 12:22:40 **2** call it actinolite or tremolite. That's how I
 12:22:42 **3** do it.
 12:22:43 **4** Q. (By Mr. Chachkes) Okay. Do you calculate
 12:22:44 **5** the ratio of metals to silicon? Do you do that?
 12:22:47 **6** MR. CIRSCH: Object to form.
 12:22:49 **7** THE WITNESS: I think I've told you at
 12:22:53 **8** least a half hour ago that I don't get a ruler
 12:22:56 **9** out and measure each of the primary elements
 12:22:58 **10** we're dealing with here, magnesium, silicon and
 12:23:03 **11** calcium. I look at these distinct patterns,
 12:23:06 **12** EDXA patterns, and can look at that and tell you
 12:23:10 **13** that that is what matches for regulated
 12:23:13 **14** tremolite asbestos.
 12:23:14 **15** Q. (By Mr. Chachkes) Okay. Putting aside
 12:23:15 **16** that you don't get a ruler out, do you kind of sort
 12:23:20 **17** of estimate that ratio of metals to silicon in your
 12:23:24 **18** head when you do this analysis?
 12:23:25 **19** MR. CIRSCH: Alex, he's answered this
 12:23:27 **20** question a number of times.
 12:23:28 **21** MR. CHACHKES: No, he said he doesn't take
 12:23:30 **22** out a ruler.
 12:23:31 **23** MR. CIRSCH: A number of different times
 12:23:32 **24** he's testified as to how he does the process.
 12:23:34 **25** I'll let him answer it one more time and then
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98

12:21:32 **1** Q. (By Mr. Chachkes) No, no. I want to make
 12:21:33 **2** sure you understand it.
 12:21:34 **3** Do you understand what I mean by the ratio
 12:21:36 **4** of metals to silicon; do you understand that?
 12:21:39 **5** A. Yes, sir.
 12:21:40 **6** Q. Okay. Do you calculate that number in
 12:21:45 **7** your head, write it down, print it out? Do you
 12:21:48 **8** calculate that number?
 12:21:50 **9** MR. CIRSCH: Object to form.
 12:21:51 **10** THE WITNESS: I don't know how I do it.
 12:21:56 **11** Tremolite, the ratios to magnesium, silicon, and
 12:22:00 **12** calcium are fairly unique. Not aware of any
 12:22:03 **13** other fibrous materials that will have those
 12:22:06 **14** specific ratios without some other additional
 12:22:08 **15** elements such as aluminum and an amphibole
 12:22:12 **16** diffraction pattern.
 12:22:13 **17** Q. (By Mr. Chachkes) Okay. You keep
 12:22:15 **18** answering a different question, but what I heard is
 12:22:16 **19** that you don't calculate the ratio. You actually run
 12:22:20 **20** the numbers and calculate the ratios of metal to
 12:22:23 **21** silicon; is that correct? You don't run that number?
 12:22:25 **22** MR. CIRSCH: Object to form.
 12:22:26 **23** THE WITNESS: I look at -- when I'm doing
 12:22:28 **24** this, I look at every pattern and compare it to
 12:22:32 **25** the standard patterns for those three elements,
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100

1 I'm going to instruct him not to answer --
 12:23:37 **2** MR. CHACHKES: You're at perfect liberty
 12:23:38 **3** to shut the questions down at any point.
 12:23:40 **4** MR. CIRSCH: I know. I'm going to let him
 12:23:41 **5** do it one more time.
 12:23:42 **6** MR. CHACHKES: Okay.
 12:23:42 **7** Q. (By Mr. Chachkes) Do you estimate --
 12:23:42 **8** putting aside whether you use a ruler or not to make
 12:23:45 **9** it exact, do you estimate the ratio of metal to
 12:23:48 **10** silicon in the EDXA spectra?
 12:23:50 **11** A. For at least the tenth time, and my last
 12:23:53 **12** time, when I generate a spectra of -- and I'll just
 12:23:59 **13** call it right now suspected regulated tremolite, I
 12:24:03 **14** look at the overall pattern for magnesium, silicon,
 12:24:07 **15** and calcium and determine that it is consistent with
 12:24:11 **16** the standards, and that's how I make that
 12:24:14 **17** determination.
 12:24:14 **18** Q. And is that overall pattern that you say
 12:24:16 **19** you look at, is that the ratio of metals to silicon?
 12:24:21 **20** A. I am not answering this question anymore.
 12:24:24 **21** MR. CIRSCH: Object to form. That's it.
 12:24:25 **22** Q. (By Mr. Chachkes) All right. So you will
 12:24:26 **23** not answer that question?
 12:24:28 **24** A. I've answered the question I'm estimating
 12:24:31 **25** at least ten times.
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12:24:33 **1** Q. Okay. And you won't come back at some
 12:24:36 **2** point and say, yes, indeed, I calculate a number that
 12:24:41 **3** is the ratio of metals to silicon. You won't come
 12:24:43 **4** back and say that, will you?
 12:24:43 **5** MR. CIRSCH: Object to form.
 12:24:44 **6** Don't answer the question, Dr. Longo.
 12:24:45 **7** Move on, please, Counsel.
 12:24:47 **8** Q. (By Mr. Chachkes) Okay. Is the ratio of
 12:24:52 **9** metals to silicon for tremolite the same for every
 12:24:55 **10** EDXA printout?
 12:25:00 **11** A. I think I've already gone over it a couple
 12:25:04 **12** of times that depending on your detector, your EDXA
 12:25:08 **13** detector, if it is a silicon drifted, lithium drifted
 12:25:13 **14** window or windowless detector, these ratios will
 12:25:17 **15** change because it's more sensitive.
 12:25:19 **16** For example, for chrysotile, even though
 12:25:21 **17** there is more magnesium in the formula than silicon,
 12:25:28 **18** regular -- with a silicon window you will see less
 12:25:32 **19** magnesium. So it just depends on the EDS system.
 12:25:38 **20** We have both types. So you could see a
 12:25:40 **21** tremolite spectra from the windowless detector that
 12:25:45 **22** will look different than the other one as you're
 12:25:47 **23** getting ready to pull out.
 12:25:48 **24** Q. Are you aware that anthophyllite has a
 12:25:51 **25** ratio in the books published to be 7 to 8 for metals
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102
 12:25:56 **1** to silicon? Are you aware of that?
 12:25:58 **2** MR. CIRSCH: Object to form.
 12:25:58 **3** THE WITNESS: I don't know. I would have
 12:25:59 **4** to look at it.
 12:26:00 **5** Q. (By Mr. Chachkes) Okay. And you're not
 12:26:02 **6** looking to see whether there's a ratio of 7 to 8
 12:26:05 **7** metals to silicon, are you?
 12:26:07 **8** MR. CIRSCH: Object to form.
 12:26:08 **9** THE WITNESS: For anthophyllite, we look
 12:26:10 **10** at the EDXA standards, typically the NIST
 12:26:16 **11** standards, for that pattern -- I've already told
 12:26:18 **12** you I don't get out a ruler and measure these --
 12:26:22 **13** that the spectra has to be consistent, and it
 12:26:25 **14** has to be for the type of EDXA detector you're
 12:26:29 **15** using.
 12:26:29 **16** Q. (By Mr. Chachkes) It's a very simple
 12:26:31 **17** question. Do you look for a 7 to 8 ratio metals to
 12:26:35 **18** silicon --
 12:26:35 **19** MR. CIRSCH: Object to form.
 12:26:36 **20** THE WITNESS: And it's a very simple
 12:26:38 **21** answer. We look at the standard NIST type
 12:26:40 **22** spectras that give you the patterns for
 12:26:42 **23** potentially anthophyllite or potentially fibrous
 12:26:46 **24** talc.
 12:26:48 **25** Q. (By Mr. Chachkes) Are you aware that
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12:26:49 **1** tremolite has a published ratio for EDXA metals to
 12:26:52 **2** silicon of 5-to-8?
 12:26:55 **3** MR. CIRSCH: Object to form.
 12:26:55 **4** THE WITNESS: Published where?
 12:26:57 **5** MR. CIRSCH: Yeah, will you show him the
 12:26:58 **6** document if your --
 12:26:59 **7** Q. (By Mr. Chachkes) Are you aware of any
 12:27:00 **8** publication that has that?
 12:27:01 **9** A. I don't know. Show me the publication and
 12:27:03 **10** I'll take a look at it, and I'll have to look at what
 12:27:07 **11** conditions this ratio is for what type of detector.
 12:27:11 **12** Q. Okay. So sitting here today, you can't
 12:27:14 **13** point me to a peer-reviewed publication that has
 12:27:17 **14** anything other than a 5-to-8 ratio for tremolite?
 12:27:24 **15** MR. CIRSCH: Object to form. You're
 12:27:26 **16** holding something in your hand. Why don't you
 12:27:28 **17** show --
 12:27:28 **18** THE WITNESS: I don't know. I'd have to
 12:27:29 **19** look at the publication. We look at the NIST
 12:27:31 **20** standards for determining if we have tremolite,
 12:27:34 **21** anthophyllite, anthophyllite solid solution
 12:27:37 **22** series, the tremolite solid solution series.
 12:27:39 **23** Q. (By Mr. Chachkes) Do the NIST standards
 12:27:41 **24** have ratios of metals to silicon?
 12:27:43 **25** A. The NIST -- as I think we already talked
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104
 12:27:45 **1** about, I don't believe the NIST standards sends you
 12:27:47 **2** any information other than this is tremolite or this
 12:27:49 **3** is anthophyllite or this is actinolite or this is
 12:27:53 **4** crocidolite or this is amosite.
 12:27:54 **5** Q. Okay.
 12:27:54 **6** MR. CIRSCH: As soon as you get to a good
 12:27:56 **7** place, Alex, maybe we can take a lunch break.
 12:27:59 **8** MR. CHACHKES: Okay.
 12:27:59 **9** Q. (By Mr. Chachkes) Do you know what the
 12:27:59 **10** International Mineralogical Association is, the IMA?
 12:28:04 **11** A. I don't know.
 12:28:06 **12** Q. Okay. Are you aware -- so I guess you
 12:28:10 **13** wouldn't be aware they contain a comprehensive list
 12:28:14 **14** of minerals in their chemical formulas?
 12:28:16 **15** MR. CIRSCH: Object to form.
 12:28:17 **16** THE WITNESS: I'm sure they do.
 12:28:18 **17** Q. (By Mr. Chachkes) Have you ever looked at
 12:28:20 **18** that?
 12:28:20 **19** A. I don't know.
 12:28:29 **20** Q. Okay. So would you agree with the
 12:28:31 **21** statement that talc and anthophyllite have materially
 12:28:35 **22** similar chemistries so it can be difficult to
 12:28:38 **23** distinguish them on EDXA?
 12:28:41 **24** MR. CIRSCH: Object to form.
 12:28:42 **25** THE WITNESS: Yes and maybe.
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12:28:45 **1** Q. (By Mr. Chachkes) Okay. What part is
 12:28:46 **2** yes?
 12:28:47 **3** A. Yes, they have similar chemical makeup.
 12:28:50 **4** Q. And maybe they can be difficult to
 12:28:52 **5** distinguish on EDXA?
 12:28:53 **6** A. Maybe, depending on the chemistry. But we
 12:29:00 **7** don't distinguish fibrous talc from anthophyllite by
 12:29:05 **8** just EDXA.
 12:29:06 **9** Q. Okay. Am I correct that it can be
 12:29:09 **10** difficult under EDXA to distinguish anthophyllite
 12:29:14 **11** from talc?
 12:29:16 **12** MR. CIRSCH: Object to form.
 12:29:17 **13** THE WITNESS: I don't know about how
 12:29:18 **14** difficult or not difficult. It's not something
 12:29:20 **15** we do to distinguish anthophyllite from talc
 12:29:22 **16** just on the EDXA other than, okay, it has the
 12:29:25 **17** appropriate chemistry.
 12:29:28 **18** MR. CHACHKES: Okay. We can take a break
 12:29:32 **19** here. Lunchtime.
 12:29:33 **20** (Lunch recess from 12:29 p.m. to 1:35 p.m.)
 13:36:03 **21** Q. (By Mr. Chachkes) Dr. Longo, you had
 13:37:02 **22** mentioned before that you had looked at industrial
 13:37:05 **23** talc for asbestos; is that correct?
 13:37:06 **24** A. Yes.
 13:37:07 **25** Q. And for whom did you do that work?
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13:38:26 **1** that was associated with a particular company?
 13:38:30 **2** A. Oh, the company, it was Nytal Vanderbilt
 13:38:35 **3** talc.
 13:38:35 **4** Q. Okay. But this is plaintiffs' side?
 13:38:39 **5** A. Yes, sir.
 13:38:39 **6** Q. What about the first time you ever looked
 13:38:43 **7** at industrial talc for asbestos, when was that?
 13:38:45 **8** A. As I testified earlier, sometime in the
 13:38:47 **9** 1990s or early 2000s.
 13:38:50 **10** Q. Was that one engagement? Multiple
 13:38:56 **11** engagements?
 13:38:57 **12** A. I don't recall.
 13:38:58 **13** Q. It could be one engagement; you just don't
 13:39:00 **14** remember?
 13:39:01 **15** A. I'm sure it's more, but I just don't
 13:39:02 **16** recall.
 13:39:03 **17** Q. Greater than five? Less than five?
 13:39:05 **18** A. I don't know what size bread box it is.
 13:39:09 **19** Q. Okay. So you've established probably more
 13:39:12 **20** than one, but after that you can't say?
 13:39:14 **21** A. I just don't recall.
 13:39:15 **22** Q. Okay. What about more than one; you can
 13:39:17 **23** say it's more than one?
 13:39:19 **24** MR. CIRSCH: Object to form.
 13:39:20 **25** THE WITNESS: I believe so.
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106
 13:37:10 **1** A. For whom? Which plaintiffs' attorney?
 13:37:13 **2** Q. Sure.
 13:37:14 **3** A. I don't recall.
 13:37:18 **4** Q. For what client, company, did you do that
 13:37:20 **5** work?
 13:37:21 **6** A. I haven't done any work for any client
 13:37:29 **7** companies that I'm at liberty to talk about for
 13:37:38 **8** industrial talc.
 13:37:45 **9** Q. Okay. I'm just asking you yes or no, do
 13:37:48 **10** you remember the names of the companies or company?
 13:37:50 **11** A. I can't talk about any potential work we
 13:37:53 **12** may or may not have done for an industrial talc
 13:37:56 **13** company.
 13:37:56 **14** Q. No, this is just a yes or no. Do you
 13:37:58 **15** remember the name? I'm not asking for the name, just
 13:38:01 **16** do you remember the name?
 13:38:03 **17** A. Again, I'm not saying I have or I haven't.
 13:38:06 **18** I'm just not at liberty if I have and if no report
 13:38:10 **19** has been issued, at liberty to talk about it.
 13:38:13 **20** Q. Okay. You mentioned that you might have
 13:38:15 **21** looked at industrial talc for plaintiff lawyers. Was
 13:38:18 **22** that recent?
 13:38:19 **23** A. I think the most recent one was back in
 13:38:21 **24** 2017 for the Kazan firm.
 13:38:24 **25** Q. Okay. And you just don't know whether
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108
 13:39:21 **1** Q. (By Mr. Chachkes) Okay. And did you
 13:39:22 **2** personally do the TEM work on that?
 13:39:23 **3** A. Back in those days, probably.
 13:39:27 **4** Q. Did you do any -- personally do any PLM
 13:39:30 **5** work?
 13:39:30 **6** A. No.
 13:39:30 **7** Q. Personally do any XRD work?
 13:39:32 **8** A. No.
 13:39:32 **9** Q. Personally do any EDXA work?
 13:39:35 **10** A. Well, when I do TEM for this type of work,
 13:39:38 **11** I would have done EDXA.
 13:39:40 **12** Q. Okay. Can you estimate in that engagement
 13:39:44 **13** or engagements in the 1990s, early 2000s range, how
 13:39:49 **14** many hours you would have spent?
 13:39:51 **15** A. No.
 13:39:52 **16** Q. Could be under ten; could be over ten?
 13:39:55 **17** A. I don't recall.
 13:39:56 **18** Q. You know who McCrone is; right?
 13:39:59 **19** A. I do.
 13:40:00 **20** Q. You know they have people there who teach
 13:40:02 **21** graduate courses related to detecting asbestos?
 13:40:05 **22** MR. CIRSCH: Object to form.
 13:40:06 **23** THE WITNESS: I know they have continuing
 13:40:10 **24** education courses, yes.
 13:40:11 **25** Q. (By Mr. Chachkes) Have you ever taught at
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13:40:12 **1** a graduate school?
 13:40:14 **2** **A.** Not in this type of work, no.
 13:40:16 **3** **Q.** Okay. In what type of work?
 13:40:19 **4** **A.** Well, I was visiting assistant professor,
 13:40:21 **5** so it would have been materials science.
 13:40:23 **6** **Q.** Okay. Nothing to do with detecting
 13:40:24 **7** asbestos?
 13:40:25 **8** **A.** No.
 13:40:25 **9** **Q.** Do you know McCrone's Particle Atlas?
 13:40:28 **10** **A.** Yes.
 13:40:28 **11** **Q.** And that's something folks other than
 13:40:31 **12** McCrone use as a standard in this field?
 13:40:36 **13** **A.** Yes.
 13:40:36 **14** **Q.** Have you ever published anything that
 13:40:39 **15** other people outside of your lab use as a standard?
 13:40:43 **16** **MR. CIRSCH:** Object to form.
 13:40:45 **17** **THE WITNESS:** Not in a book, no.
 13:40:47 **18** **Q.** (By Mr. Chachkes) What about otherwise?
 13:40:50 **19** **A.** Yes, if you go to Federal Mogul's and
 13:40:54 **20** search for wollastonite detection, one of our
 13:40:58 **21** protocols was published by them for the determination
 13:41:02 **22** of tremolite asbestos in wollastonite for Federal
 13:41:07 **23** Mogul involving their manufacture of OEM brakes.
 13:41:11 **24** **Q.** What is Federal Mogul? I'm not familiar
 13:41:12 **25** with that.
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110

13:41:12 **1** **A.** It's a company that owns a bunch of
 13:41:14 **2** companies.
 13:41:14 **3** **Q.** Okay. So you published -- I'm sorry, say
 13:41:20 **4** it again. What does it stand for?
 13:41:22 **5** **A.** Well, I didn't publish it. We wrote a
 13:41:25 **6** protocol for determining a problem they were having
 13:41:29 **7** with the supplier of a mineral called wollastonite,
 13:41:29 **8** which is a substitute fibrous material, and the
 13:41:31 **9** particular source that they were using stated that it
 13:41:36 **10** had a small amount of tremolite contamination in it.
 13:41:38 **11** **Q.** Okay. Did you ever published a standard
 13:41:40 **12** for finding asbestos that was for the general
 13:41:44 **13** scientific community, not for just one specific
 13:41:49 **14** client?
 13:41:49 **15** **MR. CIRSCH:** Object to form.
 13:41:50 **16** **THE WITNESS:** I was in charge of the ASTM
 13:41:52 **17** and the D2205 committee for the analysis of --
 13:41:57 **18** number count analysis of asbestos in settled
 13:42:01 **19** dust. It's the D5755, I believe it is.
 13:42:05 **20** **Q.** (By Mr. Chachkes) Okay. And that has
 13:42:08 **21** your name on it?
 13:42:09 **22** **A.** No. ASTM standards have ASTM on it.
 13:42:13 **23** **Q.** Okay. And that was -- that standard --
 13:42:16 **24** the contributors were many more people than you;
25 right?
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13:42:19 **1** **A.** Yes. Some people contributed, but I was
 13:42:22 **2** in charge of -- it was our method that we had given
 13:42:25 **3** to the EPA. Then it was fighting over the
 13:42:30 **4** definitions.
 13:42:31 **5** **Q.** Have you or MAS published any standard for
 13:42:35 **6** finding asbestos in any material or any mineral or
 13:42:39 **7** anywhere that is attributable exclusively to you or
 13:42:43 **8** MAS?
 13:42:43 **9** **A.** No.
 13:42:44 **10** **Q.** Have you published a methodology for
 13:42:55 **11** finding asbestos in talc?
 13:42:57 **12** **A.** Have not.
 13:42:59 **13** **Q.** You're aware that McCrone has done that;
 13:43:01 **14** right?
 13:43:01 **15** **MR. CIRSCH:** Object to form.
 13:43:02 **16** **THE WITNESS:** Jim Millette, yes, I'm
 13:43:05 **17** aware, 1990 and 2015, I believe, are the two
 13:43:09 **18** papers in Microscopy.
 13:43:10 **19** **Q.** (By Mr. Chachkes) You're aware that
 13:43:11 **20** McCrone has testing and training classes related to
 13:43:14 **21** finding asbestos; correct?
 13:43:15 **22** **MR. CIRSCH:** Object to form.
 13:43:16 **23** **THE WITNESS:** They teach a -- used to,
 13:43:19 **24** anyway, the McCrone Institute. May still do it.
 13:43:25 **25** **Q.** (By Mr. Chachkes) Have you ever taught or
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112

13:43:30 **1** trained -- sponsored teaching or training classes for
 13:43:34 **2** finding asbestos for people outside of MAS?
 13:43:36 **3** **A.** I've given a couple lectures and taught an
 13:43:39 **4** all-day two-day seminar at the American Industrial
 13:43:44 **5** Hygiene Association to help train, to give certified
 13:43:48 **6** industrial hygienists or industrial hygienists how to
 13:43:51 **7** perform TEM analysis for asbestos.
 13:43:54 **8** **Q.** Okay. Other than that, any?
 13:43:57 **9** **A.** At Georgia Tech in their continuing
 13:44:00 **10** education program involving asbestos, seminar up at
 13:44:08 **11** Southern University of New York, I have taught there
 13:44:13 **12** for a week. Again, it was TEM analysis for asbestos.
 13:44:19 **13** **Q.** Okay. Was it for finding talc, asbestos
 13:44:24 **14** in talc?
 13:44:25 **15** **A.** No, it was just general finding asbestos
 13:44:28 **16** in whatever you wanted to look in.
 13:44:30 **17** **Q.** Have you or MAS given any training or
 13:44:36 **18** classes relating to finding asbestos in talc?
 13:44:39 **19** **A.** No.
 13:44:39 **20** **Q.** Has any School of Public Health asked you
 13:44:43 **21** to assist them in finding asbestos in talc?
 13:44:46 **22** **A.** No.
 13:44:47 **23** **Q.** You're aware that a number of governmental
 13:44:51 **24** bodies are out there, not just in the U.S. but
 13:44:54 **25** elsewhere, looking into the question of whether
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13:44:58 **1** asbestos is in cosmetic talc; correct?

13:45:01 **2** MR. CIRSCH: Object to form.

13:45:02 **3** THE WITNESS: I'm aware of Canada and

13:45:06 **4** maybe India, maybe. I've seen some articles.

13:45:07 **5** Q. (By Mr. Chachkes) Okay. Have any of

13:45:07 **6** those -- any governmental body, U.S. or otherwise,

13:45:10 **7** asked you to assist in determining whether cosmetic

13:45:13 **8** talc has asbestos?

13:45:15 **9** MR. CIRSCH: Object to form.

13:45:16 **10** THE WITNESS: No.

13:45:18 **11** Q. (By Mr. Chachkes) Has any federal court

13:45:20 **12** ever said that your methodology for finding talc

13:45:23 **13** in -- asbestos in talc passes Daubert standards?

13:45:30 **14** A. I'm not sure I've had a Daubert standard

13:45:32 **15** in federal court yet. As for state court, I think

13:45:36 **16** there's been seven, six or seven challenges.

13:45:39 **17** Q. So my question is about federal court.

13:45:41 **18** Has any federal court certified you under Daubert

13:45:43 **19** standards for finding asbestos in talc?

13:45:45 **20** MR. CIRSCH: Object to form.

13:45:46 **21** THE WITNESS: As I just stated, I don't

13:45:48 **22** believe I've been in federal court yet other

13:45:50 **23** than this one for -- where any Daubert

13:45:56 **24** challenges would arise.

13:45:57 **25** Q. (By Mr. Chachkes) Has your methodology

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13:47:13 **1** specific one for joint compound or a specific one for

13:47:17 **2** thermal insulation. It's just a matter of being able

13:47:23 **3** to determine and detect and to record what is

13:47:27 **4** present.

13:47:28 **5** Q. Okay. Does the NVLA have an accreditation

13:47:33 **6** standard for finding talc in something other than

13:47:36 **7** air, like in -- I'm sorry, strike that.

13:47:37 **8** Does the NVLA have an accreditation

13:47:41 **9** standard for finding asbestos in something other than

13:47:43 **10** air, like in talc?

13:47:44 **11** MR. CIRSCH: Object to form.

13:47:45 **12** THE WITNESS: Well, they accredited to the

13:47:48 **13** EPA 600/R-93 PLM method. That's not specific

13:47:53 **14** for talc. It's building materials.

13:47:56 **15** Q. (By Mr. Chachkes) And do they accredit

13:47:58 **16** you for methodology or something else?

13:48:01 **17** A. To be able to perform the analysis.

13:48:04 **18** Q. Meaning what?

13:48:06 **19** A. Meaning if you -- we have round-robins

13:48:10 **20** that you can adequately identify products that have a

13:48:14 **21** certain concentration of asbestos in it that you

13:48:16 **22** would routinely see for building products.

13:48:18 **23** Q. Has NVLA ever accredited you specifically

13:48:21 **24** for finding talc in asbestos?

13:48:24 **25** A. I think, as I've already stated, they

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114

13:45:59 **1** for finding asbestos in talc ever been published in a

13:46:04 **2** peer-review journal or literature otherwise?

13:46:05 **3** MR. CIRSCH: Object to form.

13:46:06 **4** THE WITNESS: Well, it's not my method,

13:46:08 **5** and the Blount method by PLM has been published

13:46:13 **6** and the ISO 22262-2 is an international

13:46:16 **7** standard. So it's not my method; it's standard

13:46:20 **8** protocols for doing the method.

13:46:21 **9** Q. (By Mr. Chachkes) Is all your analysis

13:46:23 **10** for -- all your analysis of cosmetic talc for

13:46:27 **11** asbestos been for and sponsored by plaintiffs'

13:46:30 **12** lawyers?

13:46:31 **13** A. Yes.

13:46:31 **14** Q. You mentioned the NVLA. What is that?

13:46:36 **15** A. National Voluntary Laboratory

13:46:41 **16** Accreditation Program for the determination of

13:46:42 **17** asbestos in air samples by TEM and bulk analysis.

13:46:47 **18** Q. Does the NVLA have an accreditation for

13:46:52 **19** finding asbestos in talc?

13:46:54 **20** A. It's hard to say because they don't really

13:47:01 **21** dictate what the matrix is.

13:47:04 **22** Q. When you say matrix, what do you mean by

13:47:06 **23** that?

13:47:06 **24** A. Well, it's just asbestos in materials.

13:47:09 **25** I'm not sure they have a specific one for talc or a

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116

13:48:26 **1** don't have a previous matrix, meaning what is the

13:48:29 **2** asbestos in. They go by the EPA 600/R-93 method for

13:48:36 **3** analysis of bulk samples, typically building material

13:48:40 **4** bulk samples for asbestos.

13:48:41 **5** Q. So the NVLA, did they actually have

13:48:44 **6** someone come to your lab and do this accreditation?

13:48:46 **7** A. Yes.

13:48:46 **8** Q. Okay. When that person came to your lab

13:48:47 **9** for the accreditation, did they ask to see your

13:48:51 **10** techniques and methodologies for finding asbestos in

13:48:53 **11** talc?

13:48:54 **12** MR. CIRSCH: Object to form.

13:48:55 **13** THE WITNESS: Again, they don't say talc

13:48:57 **14** and they don't say any particular thing. It's

13:48:58 **15** just your overall methodology for performing the

13:49:01 **16** analysis. And usually the auditor will bring

13:49:07 **17** samples and have the analyst be able to

13:49:10 **18** determine the type and the estimated weight

13:49:14 **19** percent of what's in the sample.

13:49:15 **20** Q. (By Mr. Chachkes) Okay. So the samples

13:49:18 **21** that the NVLA brought for you to analyze for your

13:49:22 **22** accreditation were not talc samples; correct?

13:49:25 **23** A. I don't believe so, no.

13:49:25 **24** Q. They were just straight-up samples of

13:49:28 **25** different kinds of asbestos; right?

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13:49:30 **1** **A.** In some building material.
 13:49:32 **2** **Q.** Okay. Is the NVLA accreditation standard
 13:49:38 **3** public?
 13:49:39 **4** **A.** When you -- I don't understand what you
 13:49:40 **5** mean.
 13:49:40 **6** **Q.** Obviously, they must have some standard
 13:49:42 **7** that they're comparing you to. Is that written down,
 13:49:44 **8** or is it just in the minds of the NVLA?
 13:49:49 **9** **MR. CIRSCH:** Form.
 13:49:50 **10** **THE WITNESS:** I mean, there is a set this
 13:49:50 **11** is what you have to do and be able to do, plus
 13:49:54 **12** the PAT rounds that's sent out by the Research
 13:50:02 **13** Triangle Institute where they send samples out,
 13:50:05 **14** your analysts have to analyze them and send them
 13:50:08 **15** in, and they compare to see if you pass or fail.
 13:50:10 **16** **Q.** (By Mr. Chachkes) Okay. My question was
 13:50:14 **17** do they have published standards?
 13:50:16 **18** **MR. CIRSCH:** Object to form.
 13:50:17 **19** **Q.** (By Mr. Chachkes) Something written down
 13:50:17 **20** where I can look at it and read on the page, ah, this
 13:50:20 **21** is how they accredit me?
 13:50:22 **22** **MR. CIRSCH:** Object to form.
 13:50:23 **23** **THE WITNESS:** I think you can go to the
 13:50:24 **24** NIST website for this type of -- and download
 13:50:29 **25** it. I'm sure it's public.
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13:51:46 **1** **A.** I believe so.
 13:51:47 **2** **Q.** Okay. And you said you brought something.
 13:51:49 **3** What did you bring?
 13:51:50 **4** **A.** Well, I brought the EDXA on 200 tremolite
 13:51:55 **5** fibers and bundles that was done, the 1867.
 13:52:01 **6** **Q.** Oh, I'm sorry, so this is something you've
 13:52:04 **7** already produced; you just brought it -- also brought
 13:52:05 **8** it?
 13:52:06 **9** **A.** Yes.
 13:52:06 **10** **Q.** Okay.
 13:52:06 **11** **A.** I mean, it's in my reliance documents, and
 13:52:08 **12** it can give you a -- if you look at the ratios,
 13:52:14 **13** they're pretty much identical to what you were
 13:52:16 **14** showing me here.
 13:52:17 **15** **Q.** Okay. And did you bring any other
 13:52:25 **16** documents that haven't been produced?
 13:52:27 **17** Did you bring any documents that haven't
 13:52:28 **18** been produced?
 13:52:29 **19** **A.** Well, these have been produced.
 13:52:31 **20** **Q.** Right. So I'm asking separate and apart
 13:52:33 **21** from that.
 13:52:33 **22** **A.** Oh.
 13:52:34 **23** **Q.** Did you bring any documents today that
 13:52:35 **24** haven't been produced?
 13:52:36 **25** **A.** No.
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118
 13:50:32 **1** **Q.** (By Mr. Chachkes) Now, you've run NIST
 13:50:36 **2** standards for EDSA; correct?
 13:50:39 **3** **A.** Correct.
 13:50:39 **4** **Q.** How often do you run those?
 13:50:43 **5** **A.** I think you asked me earlier. I don't
 13:50:45 **6** recall. I brought some here because since we were
 13:50:48 **7** looking at the EDXA or talking about EDXA of
 13:50:53 **8** tremolite, it's in my reliance documents where we
 13:50:56 **9** measured the EDXA on 200 tremolite fibers and bundles
 13:51:02 **10** showing you the, quote, pattern.
 13:51:06 **11** **Q.** I'm sorry, you're talking about the NIST
 13:51:08 **12** standard right now?
 13:51:08 **13** **A.** Yes.
 13:51:09 **14** **Q.** Okay. So you analyzed 200 NIST standards?
 13:51:11 **15** **A.** Well, 200 particles in a NIST standard.
 13:51:13 **16** **Q.** Okay. So you've at least done one NIST
 13:51:16 **17** standard. Have you done more than one NIST standard?
 13:51:19 **18** **A.** We have analyzed all the NIST standards to
 13:51:26 **19** generate standards of EDXA.
 13:51:29 **20** **Q.** Same for SAED?
 13:51:31 **21** **A.** Yes.
 13:51:32 **22** **Q.** Same for TEM?
 13:51:35 **23** **A.** Well, TEM would be EDXA and SAED.
 13:51:39 **24** **Q.** Okay. And do you keep those materials,
 13:51:45 **25** the standards you run?
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120
 13:52:36 **1** **Q.** Okay. So those are your NIST samples for
 13:52:45 **2** EDXA; right?
 13:52:47 **3** **A.** Right. We were looking at the
 13:52:48 **4** Addison-Davies method to see if boiling the acid --
 13:52:52 **5** boiling the tremolite in sulfuric acid for an hour
 13:52:56 **6** and then boiling it in sodium hydroxide for an hour,
 13:53:00 **7** did it change any chemical component or size
 13:53:03 **8** distribution of the NIST standard.
 13:53:05 **9** **Q.** Did you produce your NIST standard
 13:53:07 **10** analysis for TEM?
 13:53:11 **11** **A.** That is TEM.
 13:53:11 **12** **Q.** Okay. All right. For what about PLM, did
 13:53:15 **13** you produce those?
 13:53:16 **14** **A.** No.
 13:53:16 **15** **MR. CIRSCH:** Object to form.
 13:53:18 **16** **THE WITNESS:** You typically -- since it's
 13:53:21 **17** almost 100 percent tremolite, it's not usually a
 13:53:23 **18** standard that you develop for PLM. You can look
 13:53:25 **19** at it and check your refractive indices and make
 13:53:30 **20** sure -- the oblique extinction, et cetera, but
 13:53:34 **21** you don't usually just run those.
 13:53:36 **22** **Q.** (By Mr. Chachkes) Okay. So when you say
 13:53:37 **23** you don't usually, you did not run NIST standards for
 13:53:40 **24** PLM; is that what I'm hearing?
 13:53:42 **25** **A.** I don't know if we have. I don't believe
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121

13:53:44 **1** SO.
13:53:44 **2** **Q.** Okay. If you did, would you have kept the
13:53:47 **3** material?
13:53:48 **4** MR. CIRSCH: Object to form.
13:53:49 **5** THE WITNESS: I don't know.
13:53:50 **6** **Q.** (By Mr. Chachkes) Okay. We would ask any
13:53:51 **7** of that material be produced.
13:53:54 **8** Any other NIST standards that you ran
13:53:57 **9** under any other instruments that we haven't talked
13:53:59 **10** about?
13:53:59 **11** **A.** No.
13:54:14 **12** MS. TROVATO: I'm sorry, I have Exhibit 10
13:54:15 **13** to this deposition --
13:54:16 **14** MR. CIRSCH: That's been marked at a
13:54:18 **15** previous deposition.
13:54:18 **16** THE WITNESS: That was marked on 3/21.
13:54:18 **17** MS. TROVATO: I want to mark it here.
13:54:21 **18** MR. CHACHKES: Okay. Can we mark this as
13:54:22 **19** Exhibit 14.
13:54:24 **20** (Defendants' Exhibit 14 was marked for
13:54:33 **21** identification.)
13:54:33 **22** **Q.** (By Mr. Chachkes) Okay. So Exhibit 14 is
13:54:34 **23** what you were just referring to as the -- you ran a
13:54:37 **24** NIST standard and the Addison-Davies technique,
13:54:39 **25** that's 14; right?
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122

13:54:40 **1** **A.** Yes, sir.
13:54:40 **2** **Q.** Okay. Looking back at -- can you go back
13:54:46 **3** to Exhibit 12, which is the EDXA spectrum.
13:54:54 **4** If I handed this to a very experienced
13:55:00 **5** EDXA scientist, as experienced as you want, and I
13:55:06 **6** gave him no context where it came from, you know,
13:55:12 **7** anything other than just this printout, would they
13:55:14 **8** identify this as tremolite and only tremolite?
13:55:17 **9** MR. CIRSCH: Object to form.
13:55:18 **10** THE WITNESS: I can't opine about what
13:55:20 **11** other people would do. If I looked at this, my
13:55:24 **12** reaction would be that looks like tremolite.
13:55:27 **13** **Q.** (By Mr. Chachkes) Okay. I'm not talking
13:55:28 **14** about you. Again, this is about the question of what
13:55:32 **15** a third-party would and how they would interpret
13:55:37 **16** this.
13:55:37 **17** Would somebody who is a very experienced
13:55:39 **18** EDSA scientist look at this spectra and say I know
13:55:47 **19** what this is, this is tremolite? Or are there other
13:55:50 **20** minerals that are consistent with this?
13:55:53 **21** MR. CIRSCH: Object to form.
13:55:54 **22** THE WITNESS: I can't speculate on what
13:55:55 **23** other experienced TEM folks would do. I can
13:55:58 **24** just tell you, since I'm sitting here, that I
13:56:02 **25** would say that's probably tremolite.
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123

13:56:04 **1** **Q.** (By Mr. Chachkes) Okay. Again, I know
13:56:05 **2** what you think. So these questions aren't about what
13:56:08 **3** you think.
13:56:09 **4** Do you think a third-party scientist
13:56:11 **5** looking at Exhibit 12, without knowing context, just
13:56:15 **6** looking at what's in Exhibit 12, this EDSA spectrum,
13:56:18 **7** might say that also corresponds to minerals that
13:56:23 **8** aren't tremolite?
13:56:25 **9** MR. CIRSCH: Object to form. He's already
13:56:26 **10** answered the question. It calls for
13:56:28 **11** speculation.
13:56:28 **12** THE WITNESS: I can't speculate what other
13:56:30 **13** experienced microscopists would say that is.
13:56:34 **14** **Q.** (By Mr. Chachkes) Okay. And so you can't
13:56:36 **15** testify to a reasonable degree of scientific
13:56:39 **16** certainty that this EDSA pattern in a vacuum can only
13:56:46 **17** correspond to a single mineral and only that mineral
13:56:50 **18** tremolite?
13:56:50 **19** MR. CIRSCH: Object to form.
13:56:52 **20** THE WITNESS: Within a reasonable degree
13:56:56 **21** of scientific certainty, if I looked at this
13:56:57 **22** mineral, I would say that looks like tremolite.
13:56:59 **23** **Q.** (By Mr. Chachkes) So I'm not asking about
13:57:00 **24** you. I'm asking -- this is a question about
13:57:02 **25** reproducibility, that if some other scientist looked
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124

13:57:06 **1** at this, not you, okay, that are you testifying that
13:57:12 **2** within a reasonable degree of scientific certainty
13:57:15 **3** that this pattern can only correspond to tremolite?
13:57:20 **4** MR. CIRSCH: Object to form.
13:57:21 **5** THE WITNESS: I can't speculate what other
13:57:22 **6** scientists -- and they wouldn't be much of a
13:57:25 **7** scientist if they were going to look at this in
13:57:28 **8** a vacuum and then make some judgment on it
13:57:31 **9** without sitting at the TEM.
13:57:32 **10** If another very experienced scientist was
13:57:34 **11** sitting at a TEM looking at the counting rules
13:57:39 **12** and it's a regulated asbestos, he would most
13:57:42 **13** likely have some information about where it came
13:57:45 **14** from --
13:57:45 **15** **Q.** (By Mr. Chachkes) Okay. So the counting
13:57:46 **16** rules, how do they apply to Exhibit 12, the EDSA?
13:57:49 **17** **A.** Well, again, you cut me off. What I'm
13:57:53 **18** saying is I don't believe it would be a very -- that
13:57:56 **19** it's very scientific to sit in a vacuum and not know
13:58:00 **20** anything about anything and look at this, and how am
13:58:04 **21** I supposed to know what some other experienced
13:58:06 **22** scientist is going to say or do?
13:58:07 **23** **Q.** Okay. I'll represent to you I've shown
13:58:10 **24** this, what's in Exhibit 12, to a very experienced
13:58:15 **25** mineralogist who also does EDXA work, and that
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13:58:19 **1** person's confirmed that this is not a unique pattern
 13:58:22 **2** for tremolite, that there are other minerals that
 13:58:24 **3** correspond.
 13:58:25 **4** Sitting here today, do you have anything
 13:58:26 **5** to provide me that disputes that?
 13:58:28 **6** MR. CIRSCH: Object to form. I mean, how
 13:58:30 **7** can he possibly testify to that?
 13:58:36 **8** MR. CHACHKES: I mean, limit the speaking
 13:58:37 **9** objections, please.
 13:58:38 **10** THE WITNESS: It's EDXA. This came off a
 13:58:41 **11** tremolite fiber bundle that we verified, that in
 13:58:45 **12** the matrix that this came out of, it's well
 13:58:48 **13** established that those type of amphiboles are
 13:58:50 **14** formed.
 13:58:52 **15** What some other expert or experienced
 13:58:57 **16** microscopist is saying that it's going to be
 13:59:00 **17** confused with some other minerals, I can't
 13:59:02 **18** comment on it. If you'd like to tell me what
 13:59:05 **19** those minerals are, I could certainly look and
 13:59:08 **20** see if there's -- (cell phone rings.)
 13:59:10 **21** Is that me? I'm sorry. It's not supposed
 13:59:16 **22** to be on. I apologize.
 13:59:24 **23** Q. (By Mr. Chachkes) What work have you done
 13:59:28 **24** to survey the world of minerals to determine what
 13:59:36 **25** other minerals other than regulated asbestos could
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14:01:00 **1** at -- and I'm just talking about the EDSA now, I'm
 14:01:03 **2** not talking about counting or things that aren't the
 14:01:06 **3** EDSA -- I'm sorry. EDXA. Let me start that again.
 14:01:11 **4** I'm talking about just the EDXA now, not
 14:01:15 **5** talking about other methods of identifying what
 14:01:17 **6** you're looking at. Did you look at any textbook or
 14:01:21 **7** peer-reviewed literature to see what this pattern
 14:01:27 **8** could also -- in Exhibit 12 -- could also correspond
 14:01:30 **9** to?
 14:01:30 **10** MR. CIRSCH: Object to form.
 14:01:31 **11** THE WITNESS: It doesn't correspond -- and
 14:01:32 **12** you're --
 14:01:33 **13** Q. (By Mr. Chachkes) The question is what
 14:01:34 **14** you looked at.
 14:01:34 **15** A. Please don't interrupt.
 14:01:37 **16** MR. CIRSCH: Let him answer the question,
 14:01:38 **17** please.
 14:01:39 **18** THE WITNESS: You're trying to do this in
 14:01:40 **19** a vacuum. Here's just an EDS pattern, I'm not
 14:01:42 **20** going to give you any other information, I'm not
 14:01:43 **21** going to let you look at what kind of -- it's a
 14:01:45 **22** fibrous structure or it's a particulate. Not
 14:01:46 **23** going to let you look at the SAED patterns.
 14:01:50 **24** It's not following the procedure we've
 14:01:52 **25** used here for all these samples. So I can't
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13:59:40 **1** have EDSA patterns that correspond to what I'm
 13:59:46 **2** looking at in Exhibit 12?
 13:59:47 **3** MR. CIRSCH: Object to form.
 13:59:48 **4** THE WITNESS: I've looked at all the
 13:59:49 **5** potential look-alikes, and again, you just can't
 13:59:53 **6** do an EDS pattern without looking at the
 13:59:56 **7** structure. Some -- and I've looked at every one
 13:59:59 **8** that Sanchez says that could be look-alikes, and
 14:00:06 **9** a number of them are not fibrous and a lot of
 14:00:09 **10** them have aluminum in it. So I'm not concerned
 14:00:13 **11** that this is anything but tremolite asbestos.
 14:00:18 **12** Q. (By Mr. Chachkes) Did you look at any
 14:00:25 **13** databases to compare this spectra to what the
 14:00:28 **14** databases say are the things that have similar EDSA
 14:00:33 **15** patterns?
 14:00:33 **16** MR. CIRSCH: Object to form.
 14:00:34 **17** THE WITNESS: No, I didn't look at any
 14:00:37 **18** databases. This was done in regards to the
 14:00:39 **19** typical TEM protocols for identifying asbestos.
 14:00:42 **20** I'm not aware of any other minerals with all the
 14:00:46 **21** characteristics of both being fibrous, meaning
 14:00:48 **22** the counting definition, the amphibole
 14:00:54 **23** diffraction pattern for the d-spacings. This is
 14:00:57 **24** not misidentified.
 14:00:59 **25** Q. (By Mr. Chachkes) Okay. Did you look
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14:01:55 **1** comment on something that I wouldn't do as an
 14:01:58 **2** expert coming in here just looking at an EDS
 14:02:01 **3** pattern with -- EDXA pattern without any other
 14:02:04 **4** information.
 14:02:04 **5** Q. (By Mr. Chachkes) Okay. So am I correct
 14:02:06 **6** that your answer is no, you did not look at a
 14:02:09 **7** textbook or peer-reviewed literature to determine
 14:02:11 **8** what this EDSA pattern could also correspond to other
 14:02:15 **9** than what you believe to be tremolite?
 14:02:16 **10** MR. CIRSCH: Object to form.
 14:02:17 **11** THE WITNESS: No. I wouldn't just take an
 14:02:19 **12** EDS pattern by itself and then run it to see
 14:02:23 **13** what other possible minerals in the world have
 14:02:26 **14** the same elements.
 14:02:27 **15** I would only be testifying here that this
 14:02:29 **16** is tremolite -- regulated tremolite asbestos
 14:02:33 **17** based on the entirety of the analysis that's
 14:02:35 **18** done for each of these fibers or bundles.
 14:02:37 **19** Q. (By Mr. Chachkes) Okay. Let's talk about
 14:02:39 **20** SAED for a moment. You did SAED pattern analysis?
 14:02:43 **21** A. Yes.
 14:02:43 **22** Q. Okay. Would you agree that the more
 14:02:49 **23** complete the SAED pattern an analyst obtains, the
 14:02:52 **24** more likely the analyst is to make an accurate
 14:02:55 **25** determination of the crystal structure?
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14:02:56 **1** MR. CIRSCH: Object to form.
 14:02:58 **2** THE WITNESS: No.
 14:02:59 **3** **Q.** (By Mr. Chachkes) Why not?
 14:02:59 **4** **A.** For tremolite you just need the
 14:03:03 **5** d-spacings. For anthophyllite, you just need to --
 14:03:07 **6** if it has anything close to the reflection or the
 14:03:09 **7** crystal orientation of fibrous talc, you just need to
 14:03:12 **8** turn it to make sure that the amphibole pattern comes
 14:03:16 **9** up. You don't need to do anything more to adequately
 14:03:20 **10** identify if it's anthophyllite versus fibrous talc or
 14:03:25 **11** anthophyllite solid solution series.
 14:03:28 **12** **Q.** Okay. Is streaking in your SAED pattern
 14:03:32 **13** something that can get in the way of an accurate
 14:03:35 **14** determination?
 14:03:35 **15** **A.** It depends on what type of asbestos it is.
 14:03:38 **16** If you're seeing streaking and you have the right
 14:03:41 **17** chemistry and it's tubular, then it's chrysotile.
 14:03:44 **18** But we don't see the streaking that's getting -- that
 14:03:47 **19** you say is getting in the way to adequately look at
 14:03:50 **20** these diffraction patterns.
 14:03:51 **21** **Q.** If the dots on an SAED pattern are out of
 14:03:56 **22** focus, does that affect the accuracy in your
 14:03:59 **23** determining the crystal structure?
 14:03:59 **24** **A.** Depends what you mean by out of focus. As
 14:04:01 **25** long as you have the particular planes of dots, how
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130
 14:04:04 **1** focused or out of focus it is sometimes doesn't
 14:04:07 **2** matter. If it's way out of focus, yes, it would.
 14:04:09 **3** **Q.** Would you agree that it's important to --
 14:04:12 **4** strike that.
 14:04:13 **5** Would you agree that the further out you
 14:04:21 **6** have complete dots in the pattern and the more
 14:04:23 **7** focused the image it is, the easier it is for the
 14:04:26 **8** analyst to study the crystal structure?
 14:04:28 **9** MR. CIRSCH: Object to form.
 14:04:29 **10** THE WITNESS: It depends.
 14:04:32 **11** **Q.** (By Mr. Chachkes) What does it depend on?
 14:04:34 **12** **A.** Well, I have to get some examples and I
 14:04:37 **13** can show you. You know, the patterns we have taken
 14:04:41 **14** have been adequate for the analyst, plus the EDXA
 14:04:45 **15** plus the fibrous nature to identify appropriately if
 14:04:49 **16** it's -- typically what we're seeing is either the
 14:04:52 **17** tremolite solid solution series, more tremolite than
 14:04:56 **18** winchite or richterite or actinolite, and
 14:04:59 **19** anthophyllite solid solution series. We don't take
 14:05:02 **20** it any further than that.
 14:05:02 **21** **Q.** So you testified that to determine whether
 14:05:04 **22** something is tremolite, you just need to know the
 14:05:07 **23** d-spacing; correct?
 14:05:08 **24** MR. CIRSCH: Object to form.
 14:05:09 **25** THE WITNESS: And the EDXA as well as
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14:05:11 **1** the -- if it is fibrous or not. That's all you
 14:05:16 **2** need.
 14:05:16 **3** **Q.** (By Mr. Chachkes) Okay.
 14:05:17 **4** **A.** And that's all NVLAP requires.
 14:05:21 **5** **Q.** Okay. And that's expressly written in the
 14:05:25 **6** NVLA standard?
 14:05:28 **7** **A.** I don't know if it's expressly written,
 14:05:30 **8** but it's not required for any of the audits that we
 14:05:33 **9** have, zone axis patterns for tremolite or any
 14:05:37 **10** regulated asbestos.
 14:05:37 **11** **Q.** Okay. So your opinion is that good
 14:05:39 **12** science is determined by whether something passes
 14:05:42 **13** NVLA accreditation?
 14:05:43 **14** MR. CIRSCH: Object to form.
 14:05:44 **15** THE WITNESS: It is good science. I don't
 14:05:48 **16** know what good science mean. I mean, versus bad
 14:05:50 **17** science?
 14:05:51 **18** NVLAP is coming in to determine that if
 14:05:55 **19** somebody sends you an air sample that you can
 14:05:57 **20** adequately identify, or bulk sample, identify
 14:06:01 **21** the asbestos to the degree that you're not
 14:06:02 **22** letting people walk into an environment where
 14:06:04 **23** they're getting exposed to asbestos.
 14:06:07 **24** We go to the -- so that we perform the
 14:06:11 **25** necessary analytical techniques for each of
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132
 14:06:14 **1** these methods to positively affirm or deny that
 14:06:19 **2** there's any detectable asbestos present.
 14:06:21 **3** **Q.** (By Mr. Chachkes) Does the NVLA have in
 14:06:23 **4** it an example of d-spacing that corresponds to
 14:06:27 **5** tremolite?
 14:06:29 **6** MR. CIRSCH: Object to the form.
 14:06:30 **7** THE WITNESS: I believe so.
 14:06:31 **8** **Q.** (By Mr. Chachkes) Okay. And we'd find
 14:06:34 **9** that on their website?
 14:06:35 **10** MR. CIRSCH: Object to form.
 14:06:36 **11** THE WITNESS: I think so.
 14:06:37 **12** **Q.** (By Mr. Chachkes) Okay. And then you
 14:06:38 **13** said for anthophyllite, what do you need, again?
 14:06:40 **14** **A.** For us, anthophyllite, we just make sure
 14:06:44 **15** it's not fibrous talc, since we're looking at talc
 14:06:50 **16** samples. And that the anthophyllite chemistry, the
 14:06:55 **17** anthophyllite solid solution chemistry is
 14:06:57 **18** appropriate, what we typically see is, because we're
 14:07:00 **19** using heavy density liquid primarily, I think, all
 14:07:03 **20** here, all with what I call iron-rich.
 14:07:07 **21** **Q.** My question is what SAED pattern
 14:07:10 **22** corresponds to anthophyllite?
 14:07:12 **23** MR. CIRSCH: Object to form.
 14:07:13 **24** THE WITNESS: Which one? There's 277 zone
 14:07:16 **25** axes. We look for a typical d-spacing of a
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14:07:19 **1** different orientation for the two selected area
 14:07:23 **2** electron diffraction patterns we take.
 14:07:26 **3 Q.** (By Mr. Chachkes) Okay. So you determine
 14:07:28 **4** whether it's anthophyllite based on d-spacing when
 14:07:30 **5** you're talking about SAED only?
 14:07:33 **6 MR.** CIRSCH: Object to form.
 14:07:33 **7 THE** WITNESS: D-spacing and a second
 14:07:36 **8** pattern from a different crystalline orientation
 14:07:42 **9** so that you can rule out fibrous talc.
 14:07:45 **10 Q.** (By Mr. Chachkes) Okay. So for
 14:07:48 **11** tremolite, do you use two axes or just one?
 14:07:52 **12 A.** Just one. It's not required for tremolite
 14:07:56 **13** since fibrous talc does not have any calcium in it.
 14:08:01 **14** And what you're looking for in an EDS pattern is make
 14:08:05 **15** sure there's no aluminum.
 14:08:07 **16 Q.** Okay. And for anthophyllite, you use --
 14:08:10 **17** you need two axes is what you're saying?
 14:08:13 **18 A.** Two axes unless -- I think there's one in
 14:08:16 **19** the entire bunch where we only did one.
 14:08:19 **20** One axis if it doesn't have that
 14:08:22 **21** pseudohexagonal pattern of talc. There's one
 14:08:26 **22** reflection in talc -- I can't remember if it's the
 14:08:30 **23** 020 -- that some people say are similar. Doesn't
 14:08:34 **24** look similar to me. But we just do two anyway for
 14:08:38 **25** all these anthophyllite fibers and bundles.
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134

14:08:40 **1 Q.** Okay. For talc you use two axes to
 14:08:43 **2** determine whether the SAED pattern corresponds to
 14:08:46 **3** talc?
 14:08:47 **4 A.** No, we use two for anthophyllite solid
 14:08:51 **5** solution series.
 14:08:52 **6 Q.** What about talc, how do you determine
 14:08:54 **7** something under SAED is talc?
 14:08:56 **8 A.** Chemistry and one SAED pattern that has
 14:09:01 **9** the hexagonal dot pattern.
 14:09:06 **10 Q.** Okay. So you use -- for the SAED portion
 14:09:10 **11** of identifying something as talc, you use only one
 14:09:13 **12** pattern; is that correct?
 14:09:15 **13 A.** That's correct.
 14:09:15 **14 Q.** Okay. If I took that one pattern that you
 14:09:21 **15** use to identify talc under SAED, can that pattern
 14:09:25 **16** only correspond to talc?
 14:09:29 **17 MR.** CIRSCH: Object to form.
 14:09:30 **18 THE** WITNESS: It can only correspond to
 14:09:32 **19** talc as long as you have the chemistry to go
 14:09:35 **20** along with it. Again, nothing here is done in a
 14:09:37 **21** vacuum of just one and nothing else.
 14:09:39 **22 Q.** (By Mr. Chachkes) Okay. My question
 14:09:41 **23** really isn't a vacuum. And I understand your
 14:09:43 **24** qualification you think it's completely unfair, but I
 14:09:46 **25** do want to hear what you have to say about this.
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14:09:48 **1** If I have an isolated SAED pattern for
 14:09:53 **2** talc in one axis and only that, no other information,
 14:10:00 **3** does that uniquely identify talc?
 14:10:02 **4 MR.** CIRSCH: Object to form.
 14:10:03 **5 THE** WITNESS: I would not call it. I
 14:10:04 **6** don't know what somebody else would do. I would
 14:10:07 **7** want to see what we're looking at. Certainly if
 14:10:09 **8** it's a talc plate versus chemistry -- but we're
 14:10:13 **9** primarily interested in the fibrous talc.
 14:10:15 **10** If you're an experienced TEM analyst, you
 14:10:20 **11** wouldn't just do it -- to me, my opinion, you
 14:10:23 **12** just wouldn't try in a vacuum without any
 14:10:25 **13** information to look at a talc SAED and say
 14:10:29 **14** that's talc.
 14:10:30 **15 Q.** (By Mr. Chachkes) Okay. So recall that
 14:10:31 **16** when I asked you my question, I'm saying looking at
 14:10:34 **17** SAED in a vacuum and then you went on to talk about a
 14:10:37 **18** number of things that aren't SAED, like chemistry,
 14:10:41 **19** fibers, plates. So this is a very specific question
 14:10:45 **20** and yes or no. Does a one-axis SAED pattern for talc
 14:10:54 **21** uniquely identify this as talc?
 14:10:58 **22 MR.** CIRSCH: Object to form. He's already
 14:10:59 **23** answered the question.
 14:10:59 **24 THE** WITNESS: I would not call it talc
 14:11:01 **25** just based on a one hexagonal pattern with no
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136

14:11:06 **1** other information.
 14:11:06 **2 Q.** (By Mr. Chachkes) Okay.
 14:11:06 **3 A.** I would want to do -- and have the rest of
 14:11:08 **4** the information that we talked about.
 14:11:10 **5** I wouldn't do it. Maybe somebody else
 14:11:12 **6** would. I can't comment on what other people might or
 14:11:14 **7** might not do.
 14:11:15 **8 Q.** Okay. So for tremolite, you are saying
 14:11:18 **9** you look at one axis as well; correct?
 14:11:20 **10 A.** Correct.
 14:11:21 **11 Q.** So same question. In a vacuum, all you
 14:11:25 **12** have is the SAED pattern for one axis for something
 14:11:32 **13** you otherwise would call tremolite. Does that
 14:11:34 **14** uniquely and only identify tremolite?
 14:11:37 **15 MR.** CIRSCH: Object to form.
 14:11:38 **16 THE** WITNESS: If you were going to do
 14:11:42 **17** that, and you were -- for whatever reason that
 14:11:46 **18** here is an SAED pattern, there is nothing else,
 14:11:52 **19** if it was a zone axis, then you'd have to get
 14:11:55 **20** two zone axes, and now you're dealing with like
 14:11:58 **21** no chemistry, no idea where the tremolite fiber
 14:12:01 **22** came -- if it is tremolite.
 14:12:03 **23** So I would not do it. I can't talk about
 14:12:05 **24** what other people would do.
 14:12:06 **25 Q.** (By Mr. Chachkes) Okay. And indeed, a
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14:12:11 **1** single axis SAED pattern for something that in your
 14:12:18 **2** report corresponds to tremolite can also correspond
 14:12:23 **3** to many other crystalline structures as well;
 14:12:26 **4** correct?
 14:12:26 **5** MR. CIRSCH: Object to form.
 14:12:27 **6** Q. (By Mr. Chachkes) Just in a vacuum.
 14:12:29 **7** Again, with all the qualifications that you don't
 14:12:32 **8** want to do it in a vacuum, but my question is in a
 14:12:35 **9** vacuum.
 14:12:35 **10** MR. CIRSCH: Object to form.
 14:12:36 **11** THE WITNESS: It would be a typical
 14:12:37 **12** amphibole diffraction pattern. You could say
 14:12:39 **13** it's an amphibole, but how far you're willing to
 14:12:41 **14** go on that on just that without any other
 14:12:44 **15** information, no chemistry, no structure
 14:12:48 **16** interface, no morphology, I would not call it
 14:12:51 **17** tremolite.
 14:12:51 **18** Q. (By Mr. Chachkes) Okay. So for
 14:12:54 **19** anthophyllite, where you have two axes and so like
 14:13:00 **20** two SAED patterns, in a vacuum, do those two patterns
 14:13:06 **21** sitting in front of you, no other information,
 14:13:08 **22** uniquely identify what you're looking at as
 14:13:11 **23** anthophyllite?
 14:13:11 **24** MR. CIRSCH: Object to form.
 14:13:12 **25** THE WITNESS: I don't know. Certainly
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138

14:13:13 **1** would rule out talc with the two patterns.
 14:13:16 **2** If I wasn't told that this came out of a
 14:13:18 **3** cosmetic talc bulk sample and wasn't allowed to
 14:13:21 **4** look at any chemistry, if I wasn't allowed to do
 14:13:24 **5** any EDXA and morphology, I probably would not
 14:13:31 **6** spend the time contemplating what that was.
 14:13:33 **7** Q. (By Mr. Chachkes) Okay. You agree that
 14:13:36 **8** the same particle can have different SAED patterns at
 14:13:42 **9** different orientations; right?
 14:13:43 **10** A. Yes.
 14:13:43 **11** Q. And an SAED analyst can take measurements
 14:13:49 **12** of the crystals on various axes; correct?
 14:13:53 **13** A. Yes. You can get zone axis, and depending
 14:13:56 **14** on the orientation of the fiber or bundle, you may
 14:13:59 **15** get two -- tough to get three because of your limited
 14:14:04 **16** mobility of tilting the fiber; you have to double
 14:14:08 **17** tilt it. You could probably get three if one wanted.
 14:14:11 **18** Q. Okay. Are you an expert in SAED pattern
 14:14:17 **19** analysis?
 14:14:18 **20** A. I probably know more than the average
 14:14:20 **21** layperson.
 14:14:21 **22** Q. Okay. But are you an expert? Are you
 14:14:24 **23** somebody, for example, who maybe published any
 14:14:27 **24** articles on SAED pattern analysis?
 14:14:30 **25** MR. CIRSCH: Object to form.
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14:14:31 **1** THE WITNESS: I have not published any,
 14:14:32 **2** no.
 14:14:32 **3** Q. (By Mr. Chachkes) Have you taught SAED
 14:14:34 **4** pattern analysis?
 14:14:35 **5** A. Been a while, but yes.
 14:14:37 **6** Q. To whom?
 14:14:38 **7** A. Graduate students back in the day when I
 14:14:41 **8** was visiting assistant professor.
 14:14:42 **9** Q. How many orientations do you need to
 14:14:47 **10** uniquely identify a mineral with SAED and only SAED?
 14:14:52 **11** A. A minimum of two, maybe three.
 14:14:54 **12** Q. Measurements on an SAED are taken in
 14:15:01 **13** angstroms; correct?
 14:15:02 **14** A. Yes, sir, an angle, angle between -- you
 14:15:07 **15** identify, say, the 002, then you have to get to
 14:15:10 **16** another orientation, say, the 010 or the minus 020,
 14:15:17 **17** and then take the angles and do the measurements or
 14:15:20 **18** use CrystalMaker.
 14:15:21 **19** Q. Okay. CrystalMaker software that helps
 14:15:24 **20** you analyze?
 14:15:24 **21** A. Well, as long as it has the appropriate
 14:15:26 **22** standards in it, you could.
 14:15:28 **23** Q. Do you use CrystalMaker?
 14:15:30 **24** A. We have CrystalMaker. But, no, it's not
 14:15:32 **25** required for what we do.
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140

14:15:33 **1** Q. Okay. If you put what you otherwise
 14:15:40 **2** identified as an SAED pattern for tremolite into
 14:15:44 **3** CrystalMaker without the other end pop, the
 14:15:47 **4** identification, this is tremolite?
 14:15:49 **5** MR. CIRSCH: Object to form.
 14:15:50 **6** THE WITNESS: If you had the appropriate
 14:15:51 **7** zone axis and nothing else, it might.
 14:15:54 **8** Q. (By Mr. Chachkes) You don't know one way
 14:15:55 **9** or the other? Have you ever done that?
 14:15:57 **10** A. Have we used CrystalMaker? We have used
 14:15:59 **11** it in the past, but we don't use it for this
 14:16:02 **12** analysis.
 14:16:03 **13** Q. So have you done CrystalMaker on a single
 14:16:06 **14** axis? Have you used CrystalMaker for a single axis
 14:16:16 **15** SAED pattern?
 14:16:16 **16** MR. CIRSCH: Object to form.
 14:16:17 **17** THE WITNESS: I don't recall doing that.
 14:16:18 **18** Q. (By Mr. Chachkes) Okay. When I talked
 14:16:20 **19** about measurements being taken in angstroms, that's
 14:16:22 **20** the measurement between the dots; right?
 14:16:23 **21** A. Yes.
 14:16:24 **22** Q. And that's what we're calling d-space?
 14:16:27 **23** A. D-space is between the planes. That's the
 14:16:28 **24** measurement we do now.
 14:16:30 **25** Q. What's the difference between what I said
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14:16:32 **1** and what you said?
 14:16:33 **2** **A.** Well, you can get to the different planes,
 14:16:35 **3** but you can also get to -- the d-spacing is the
 14:16:38 **4** layers of atoms on top of each other.
 14:16:40 **5** **Q.** Okay. Can you describe how your analyst
 14:16:50 **6** calibrates the SAED apparatus?
 14:16:55 **7** **A.** They do.
 14:16:55 **8** **Q.** No, I'm sorry, can you describe how they
 14:16:57 **9** do it?
 14:16:57 **10** **A.** Well, they get the working distance, and
 14:16:59 **11** typically they're using a gold standard for the rings
 14:17:02 **12** and the working distance so they can do that
 14:17:05 **13** calibration.
 14:17:05 **14** **Q.** When you say a gold standard, what do you
 14:17:07 **15** mean by that?
 14:17:07 **16** **A.** Well, you take something that's fibrous
 14:17:11 **17** and you put a gold film on the top so that you get
 14:17:14 **18** the outer rings of the gold, which is a standard
 14:17:16 **19** measurement, and then the working distance so you can
 14:17:18 **20** calibrate.
 14:17:19 **21** **Q.** Literally a standard made of gold; is that
 14:17:22 **22** what you're saying?
 14:17:23 **23** **A.** Yes. Well, it's a very small piece of
 14:17:26 **24** gold wire --
25 **Q.** Okay.
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142
 14:17:26 **1** **A.** -- that you sputter, so you're not using a
 14:17:28 **2** lot.
 14:17:29 **3** **Q.** How often do your analysts calibrate the
 14:17:33 **4** SAED apparatus?
 14:17:35 **5** **A.** Whatever is required for our NVLAP
 14:17:37 **6** accreditation.
 14:17:38 **7** **Q.** Do you have any -- sitting here today, do
 14:17:40 **8** you know what that is?
 14:17:40 **9** **A.** No.
 14:17:41 **10** **Q.** Is that in your report?
 14:17:43 **11** **A.** No, sir.
 14:17:44 **12** **Q.** Okay. So do your analysts tilt the stage
 14:17:56 **13** on the TEM to direct the electrons at a certain face
 14:18:00 **14** of the crystal?
 14:18:01 **15** **MR. CIRSCH:** Object to form.
 14:18:02 **16** **THE WITNESS:** The only fibrous material
 14:18:06 **17** that we tilt the stage is when we suspect the
 14:18:10 **18** anthophyllite solid solution series, where we
 14:18:13 **19** rotate it to make sure that the hexagonal
 14:18:19 **20** plane -- it's not even the hexagonal plane.
 14:18:23 **21** It's a -- I always forget. It's either an 020
 14:18:26 **22** or an 002 reflection off the talc, fibrous talc
 14:18:31 **23** orientation.
 14:18:37 **24** **Q.** (By Mr. Chachkes) Okay. Can you point me
 14:18:37 **25** to published peer-reviewed literature where that's an
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14:18:37 **1** appropriate way to identify that mineral?
 14:18:39 **2** **MR. CIRSCH:** Object to form.
 14:18:40 **3** **THE WITNESS:** I can't. I mean, as I sit
 14:18:46 **4** here, I don't recall.
 14:18:47 **5** **Q.** (By Mr. Chachkes) Okay. Are the TEMs in
 14:18:51 **6** your lab equipped with -- I'm going to butcher the --
 14:18:56 **7** is it goniometer?
 14:18:57 **8** **A.** Goniometer.
 14:18:58 **9** **Q.** Okay. Are the TEMs in your lab equipped
 14:19:00 **10** with goniometers to rotate particles?
 14:19:03 **11** **A.** Yes. We have a double-tilt holder that we
 14:19:05 **12** use if we're going to do zone axis. And we have a
 14:19:08 **13** goniometer that can rotate the sample I think up to
 14:19:15 **14** 30 degrees, so it's usually at zero tilt.
 14:19:21 **15** **Q.** Okay. In your report I don't see any SAED
 14:19:25 **16** patterns done for a single subject crystal in three
 14:19:29 **17** different axes. That's correct; right?
 14:19:31 **18** **A.** That is correct, you will not find that.
 14:19:32 **19** **Q.** And you didn't do that?
 14:19:33 **20** **A.** No.
 14:19:34 **21** **Q.** Okay. Did your analyst document every
 14:19:40 **22** instance in the report where they used multiple SAED
 14:19:44 **23** patterns?
 14:19:45 **24** **A.** I hope so.
 14:19:52 **25** **MR. CHACHKES:** Maybe we should -- let's go
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144
 14:19:54 **1** to this one.
 14:20:30 **2** (Defendants' Exhibit 15 was marked for
 14:20:32 **3** identification.)
 14:20:32 **4** **Q.** (By Mr. Chachkes) Okay. Marked as
 14:20:34 **5** Exhibit 15, you recognize this as a three-axis SAED
 14:20:38 **6** for tremolite; right?
 14:20:39 **7** **A.** I know that's what it states.
 14:20:40 **8** **Q.** In your opinion, is that different? Is
 14:20:43 **9** this not a three-axis?
 14:20:46 **10** **A.** Well, it says it's -- you know the 100,
 14:20:49 **11** the 010, and the 001, that would be three crystal
 14:20:53 **12** orientations by the Miller indices. Now, if that's
 14:20:56 **13** what we're looking at here or not, I would have to go
 14:20:59 **14** measure it, get the camera constant, et cetera.
 14:21:03 **15** So I'm not here to dispute it, but I can't
 14:21:06 **16** validate that's what it is.
 14:21:08 **17** **Q.** Is there anything -- looking at this right
 14:21:09 **18** now, is there any reason you have to dispute that
 14:21:11 **19** indeed this is an accurate three-axis SAED for
 14:21:16 **20** tremolite?
 14:21:17 **21** **MR. CIRSCH:** Object to form.
 14:21:18 **22** **THE WITNESS:** I have no reason to dispute
 14:21:19 **23** it. I have no reason to accept it.
 14:21:19 **24** **Q.** (By Mr. Chachkes) Okay.
 14:21:20 **25** **A.** If that's what you're saying it is, then
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14:21:22 **1** that's what you're saying.

14:21:23 **2 Q.** Okay. You see that the pattern is

14:21:26 **3** different for each of the three axes?

14:21:27 **4 A.** Well, you have three different crystal

14:21:29 **5** orientations.

14:21:30 **6 Q.** Okay.

14:21:31 **7 A.** Of course it's going to be different.

14:21:32 **8 Q.** Okay. So you predicted my next question,

14:21:36 **9** which is in your experience, three different crystal

14:21:38 **10** orientations for SAED for the same crystal may or

14:21:42 **11** probably will produce three different patterns;

12 correct?

14:21:44 **13 A.** That is correct.

14:21:44 **14 Q.** Okay. For tremolite it certainly will

14:21:48 **15** produce three different patterns?

14:21:50 **16 A.** For most of your fibrous crystals where

14:21:54 **17** you can rotate it, yes.

14:21:56 **18 Q.** Including anthophyllite and fibrous talc?

14:22:01 **19** MR. CIRSCH: Object to form.

14:22:02 **20** THE WITNESS: Including -- no. Fibrous

14:22:02 **21** talc, not. You can rotate it. You're only

14:22:05 **22** going to get one pattern. That's why if you do

14:22:09 **23** see the reflection that some people will argue

14:22:12 **24** looks a little bit like what anthophyllite can

14:22:15 **25** do, you rotate it, and that never changes.

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14:24:12 **1** linguistically. I'm going to do that again.

14:24:13 **2 A.** That's fine.

14:24:13 **3 Q.** If I want to figure out which sample a

14:24:17 **4** particular verification page refers to, that sample

14:24:20 **5** is written on the page; correct?

14:24:21 **6 A.** Yeah, each sample number is on here.

7 Q. Okay.

14:24:24 **8 A.** You know, M68503-001. So you would look

14:24:28 **9** for '60, '70s, '80s, wherever it is, and then the

14:24:36 **10** second number, -001, would be the number 1 or the

14:24:38 **11** first asbestos structure or bundle that is the

14:24:42 **12** diffraction pattern is being taken.

14:24:44 **13 Q.** Sorry. And you went a little quick for

14:24:47 **14** me, and I apologize --

14:24:49 **15 A.** That's all right. So you see the number

14:24:50 **16** there, M68503 --

14:24:51 **17 Q.** Okay. So I see that as MAS job number.

14:24:53 **18** That's where you're pointing?

14:24:54 **19 A.** Right.

14:24:55 **20 Q.** And can you actually, just so we're on the

14:24:55 **21** same page, literally, can you go to the first

14:25:00 **22** verification?

14:25:00 **23** Okay. So you've got the MAS job number,

14:25:02 **24** and I'm looking at the number that begins M68

14:25:05 **25** something, something, something. Okay. How does

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146

14:22:51 **1** MR. CHACKES: Okay. Let's mark as 16.

14:22:53 **2** (Defendants' Exhibit 16 was marked for

14:23:07 **3** identification.)

14:23:07 **4 Q.** (By Mr. Chackes) Okay. So do you

14:23:09 **5** recognize what's been marked as Exhibit 16?

14:23:10 **6 A.** Yes, Verification of 0-Degree Amphibole

14:23:13 **7** Diffraction Patterns, these are our documents.

14:23:16 **8 Q.** Okay. This was produced to us, I think,

14:23:20 **9** Saturday. Do you recall giving this to plaintiffs'

14:23:23 **10** counsel recently --

14:23:24 **11 A.** I do.

14:23:24 **12 Q.** -- to produce?

14:23:27 **13** Okay. What is it? Can you just -- on a

14:23:28 **14** high level, what am I looking at?

14:23:31 **15 A.** High level, we're looking at the

14:23:32 **16** d-spacings of, most likely, tremolite and

14:23:40 **17** anthophyllite.

14:23:40 **18 Q.** And this corresponds to a number of

14:23:49 **19** samples that appear in your report; correct?

14:23:51 **20 A.** It does.

14:23:51 **21 Q.** Okay. And to figure out which page

14:23:56 **22** relates to which diffraction pattern, I can look on

14:24:01 **23** that page and it's written in there somewhere; right?

14:24:06 **24 A.** You'll have to -- I'm sorry.

14:24:07 **25 Q.** I think I might have messed that up

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148

14:25:06 **1** that tell me what sample that refers to?

14:25:09 **2 A.** Well, our job number would be M68503. If

14:25:14 **3** you go to the various '60s, '70s, and '80s, you'll

14:25:17 **4** see that number.

14:25:18 **5 Q.** Sorry. Let's pause. '60s, '70s, and

14:25:21 **6** '80s, you're referring to year --

14:25:22 **7 A.** The decades.

8 Q. Okay.

14:25:23 **9 A.** And so then you look for -- if it has

14:25:26 **10** M68503 on there, you look for the first dash, 001.

14:25:31 **11 Q.** And what's the first dash refer to?

14:25:33 **12 A.** Right. That will tell you that that is

14:25:35 **13** the actual sample number. Then you can go -- it will

14:25:39 **14** tell you what tab to look under.

14:25:41 **15** And then the second sample number is 001,

14:25:44 **16** means that is the first asbestos, in this case,

14:25:49 **17** anthophyllite solid solution series. It's the very

14:25:53 **18** first structure up. So you can go then to the data

14:25:56 **19** there and find that very first diffraction pattern.

14:25:59 **20 Q.** Okay. But when you say the data there, is

14:26:02 **21** that data you're referring to in Exhibit 16?

14:26:04 **22 A.** No, the data that is in the actual data

14:26:07 **23** notebooks.

14:26:07 **24 Q.** Got it. And your ability to identify

14:26:12 **25** '60s, '70s, '80s decades, is that something inherent

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14:26:17 **1** in the job number? Is that like coded in there? How
 14:26:19 **2** did you --
 14:26:19 **3** **A.** That's why I used all of them.
 14:26:20 **4** **Q.** Oh, okay.
 14:26:21 **5** **A.** If you'll give me one, I can -- you know,
 14:26:22 **6** I can probably find it. I didn't bring those along.
 14:26:24 **7** They're getting too big.
 14:26:26 **8** **Q.** Okay. I see on this page, date verified
 14:26:31 **9** 11/19/18; do you see that?
 14:26:33 **10** **A.** Yes.
 14:26:35 **11** **Q.** What does that mean? What was verified?
 14:26:37 **12** **A.** That means that's the date that the data
 14:26:39 **13** was run for this particular program that did this
 14:26:44 **14** analysis.
 14:26:45 **15** **Q.** Is that the date of the SAED as well?
 14:26:48 **16** **A.** No. If you go over to the right-hand
 14:26:51 **17** side, it says date of photo --
 14:26:53 **18** **Q.** Okay.
 14:26:54 **19** **A.** -- 10/29/2018, and the SAED pattern should
 14:26:57 **20** have that date on it.
 14:26:58 **21** **Q.** Got it. And when you say the data was run
 14:27:02 **22** on November 19, 2018, was it put into some computer
 14:27:07 **23** program, or someone did a hand d-spacing? How was
 14:27:11 **24** that --
 14:27:12 **25** **A.** No. The information is put in, it's all
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14:28:19 **1** **Q.** And is the reason that zone axis
 14:28:22 **2** information on the lower left is not put in there is
 14:28:24 **3** because you really only ran one?
 14:28:26 **4** **A.** Well, you can get a zone axis -- if you
 14:28:28 **5** happen to hit a zone axis, it will -- you can
 14:28:34 **6** calculate through that. The second anthophyllite
 14:28:36 **7** pattern for this one fiber on the next page has a
 14:28:41 **8** zone axis that said it was near the 101.
 14:28:43 **9** **Q.** Got it. So you're saying is that the
 14:28:48 **10** first verification page that I'm looking at is one
 14:28:51 **11** zone axis, and the second page is another zone axis
 14:28:54 **12** for the same anthophyllite particle?
 14:28:55 **13** **A.** No. Not quite.
 14:28:57 **14** **Q.** Okay.
 14:28:57 **15** **A.** The first one is just d-spacing, the
 14:28:59 **16** second one is just d-spacing. In this particular
 14:29:02 **17** case when they went to the second orientation, they
 14:29:05 **18** got very close to the 101 zone axis.
 14:29:08 **19** **Q.** Okay. So there's two orientations on
 14:29:11 **20** these page 1 and page 2, one is one orientation, the
 14:29:14 **21** second is another orientation?
 14:29:16 **22** **A.** Correct, for the same fiber/bundle.
 14:29:18 **23** **Q.** Got it. We've looked through this, and
 14:29:22 **24** we've totaled 35 samples, which is less than the 72
 14:29:28 **25** samples in your report. Is that consistent with what
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150

14:27:14 **1** digital, and it does the calculation. When you put
 14:27:17 **2** in the, you know, the distance, the camera constant,
 14:27:22 **3** and then it will calculate the d-spacing.
 14:27:24 **4** **Q.** I'm sorry, when you say it, there's a
 14:27:26 **5** software that you're using?
 14:27:28 **6** **A.** Yes.
 14:27:28 **7** **Q.** And does the software kind of just read
 14:27:30 **8** the image? You don't have to actually calculate the
 14:27:32 **9** d-spacing by hand?
 14:27:33 **10** **A.** Well, you have to put in the information
 14:27:35 **11** on the camera constant, but then it will read the
 14:27:39 **12** pattern and calculate what the d-spacing is.
 14:27:42 **13** **Q.** Got it. And do you know the name of that
 14:27:44 **14** software?
 14:27:45 **15** **A.** I do not.
 14:27:46 **16** **Q.** Is that on your computer?
 14:27:48 **17** **A.** It's on the TEM computers.
 14:27:52 **18** **Q.** Okay. The numbers that it generates for
 14:27:57 **19** d-spacing, is that fully disclosed here on this page?
 14:28:03 **20** **A.** Yes.
 14:28:04 **21** **Q.** Okay.
 14:28:05 **22** **A.** Over here on the calculated spacing of
 14:28:07 **23** 5.23, and if you go to anthophyllite, the d-spacing
 14:28:11 **24** is in that range of 5.02 to 5.54 on the range, plus
 14:28:17 **25** or minus 5 percent.
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152

14:29:31 **1** you believe this to be?
 14:29:34 **2** **MR. CIRSCH:** Object to form.
 14:29:35 **3** **THE WITNESS:** Well, a number of samples
 14:29:38 **4** were negative. There would be no zone axis
 14:29:42 **5** pattern.
 14:29:42 **6** A number of the samples would not have
 14:29:45 **7** been run through because we were doing
 14:29:46 **8** verification of Lee Poye's samples, and there's
 14:29:51 **9** a lot of different samples. I believe we have
 14:29:53 **10** produced all the ones that we have taken.
 14:29:55 **11** **Q.** (By Mr. Chachkes) Okay. There were 50
 14:29:57 **12** positives amongst the 72 samples you looked at, and
 14:30:00 **13** yet only 35 samples for which we have the diffraction
 14:30:08 **14** verifications. Am I incorrect there?
 14:30:11 **15** **MR. CIRSCH:** Object to form.
 14:30:13 **16** **THE WITNESS:** Well, a number of positive
 14:30:15 **17** samples there was no TEM because it was
 14:30:19 **18** negative. The Lee Poye verification on his, he
 14:30:25 **19** had six negatives where we found it positive by
 14:30:29 **20** PLM. And then an extra sample. I'll have to
 14:30:35 **21** add it all up now. I believe you have
 14:30:38 **22** everything if we went through and did the math.
 14:30:40 **23** **Q.** (By Mr. Chachkes) Okay. You had
 14:30:41 **24** personally in your lab, MAS, 50 positives; right?
 14:30:46 **25** **MR. CIRSCH:** Object to form.
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14:30:47 **1** Q. (By Mr. Chachkes) Let's strike that. All
 14:30:57 **2** right.
 14:30:57 **3** So the top of your own supplemental report
 14:31:00 **4** reads that -- I'm going to read a sentence from your
 14:31:05 **5** report, This new information changed the total number
 14:31:07 **6** of containers/samples analyzed from 71 to 72 and the
 14:31:11 **7** total positive samples from 49 to 50.
 14:31:14 **8** That's accurate; right?
 14:31:15 **9** A. Yes.
 14:31:15 **10** Q. Okay. If there are 50 positives -- let's
 14:31:19 **11** only talk about the positives. If there are 50
 14:31:21 **12** positive, why only have verifications for 35?
 14:31:24 **13** A. Well, off the top of my head, five of the
 14:31:29 **14** positives out of six is from Lee Poye's analysis. We
 14:31:34 **15** did not verify his negative samples. Those became
 14:31:38 **16** positive because of the Blount PLM and the ISO PLM.
 14:31:43 **17** Also, the two samples in Lee Poye where we could not
 14:31:47 **18** verify the nine out of 11, they became positive by
 14:31:52 **19** PLM. So now we're up to seven.
 14:31:55 **20** Q. Of the 15 we're missing; right?
 14:31:58 **21** A. Not missing any.
 14:31:59 **22** Q. Okay.
 14:31:59 **23** A. Now there's a number of samples through
 14:32:02 **24** here where the PLM and/or ISO was positive and the
 14:32:05 **25** TEM was not. If the TEM is negative, there's no
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154

14:32:09 **1** SAED. I think that will get you to your number.
 14:32:13 **2** Q. Got it.
 14:32:15 **3** So if there was a positive under TEM in
 14:32:19 **4** the MAS laboratory, I've got the verification here in
 14:32:23 **5** Exhibit 16?
 14:32:26 **6** A. You are supposed to.
 14:32:31 **7** MS. O'DELL: Let me just insert an
 14:32:31 **8** objection. There were a number of I think six
 14:32:33 **9** files that were produced very similar to
 14:32:35 **10** Exhibit 16, so they're not all contained in that
 14:32:37 **11** exhibit and --
 14:32:37 **12** MR. CHACHKES: And I agree --
 14:32:44 **13** MS. O'DELL: The record shouldn't reflect
 14:32:45 **14** that they are. There are five more documents
 14:32:48 **15** that are very similar to Exhibit 16 --
 14:32:48 **16** MR. CHACHKES: Yeah.
 14:32:51 **17** Q. (By Mr. Chachkes) And I apologize.
 14:32:51 **18** Everything I said was correct, except you have to
 14:32:54 **19** take the six files that you gave me, put them
 14:32:57 **20** together, and we only have 35.
 14:32:58 **21** A. I understood that.
 14:32:59 **22** MR. CHACHKES: Okay. So as long as the
 14:33:01 **23** witness understood, I think we're good.
 14:33:03 **24** MS. O'DELL: That's not true, but I'm glad
 14:33:06 **25** we clarified.

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14:33:08 **1** MR. CHACHKES: Well, I interpret "I
 14:33:09 **2** understood" differently than you do.
 14:33:11 **3** Q. (By Mr. Chachkes) Was a diffraction --
 14:33:12 **4** okay. Skip that.
 14:33:14 **5** Now, what are these ranges up here at the
 14:33:20 **6** top? I see like a table. What's that? The same
 14:33:25 **7** table appears to be reproduced in every single
 14:33:27 **8** verification page; am I right?
 14:33:28 **9** A. Right. That gives you the amphibole
 14:33:30 **10** types, the page number it's on, card number for the
 14:33:33 **11** mineral pallet diffraction file, and it gives the
 14:33:37 **12** calculated spacings in the range.
 14:33:39 **13** So these d-spacings are all tied back to a
 14:33:44 **14** standard that every lab should have for these
 14:33:50 **15** particular type of regulated asbestos structures.
 14:33:53 **16** Q. Okay. The page number refers to a page of
 14:33:57 **17** what, in the table?
 14:33:59 **18** A. Page of the Mineral Powder Diffraction
 14:34:02 **19** File Data for that particular mineral.
 14:34:03 **20** So grunerite will be found on page 449.
 14:34:07 **21** It will be card number 31-631. And on that card
 14:34:11 **22** number it will give you the calculated d-spacings for
 14:34:15 **23** that particular mineral.
 14:34:16 **24** Q. Okay. So it's a page within the Mineral
 14:34:21 **25** Powder Diffraction File, and then in that page is
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156

14:34:23 **1** something called a card. I imagine that's like a
 14:34:25 **2** little box?
 14:34:26 **3** A. Correct. And it will give you all the
 14:34:30 **4** d-spacing information that's published here.
 14:34:32 **5** Q. Okay. And the range, I see in the last
 14:34:37 **6** column on the right, that's the margin of error?
 14:34:41 **7** A. Correct.
 14:34:42 **8** Q. Now, if I'm reading this correctly, U4, on
 14:34:47 **9** this first page of the verification, you calculated a
 14:34:50 **10** spacing of 5.23; correct?
 14:34:53 **11** A. Correct.
 14:34:54 **12** Q. And that falls within every single
 14:34:57 **13** amphibole types range in that chart?
 14:35:01 **14** A. That's correct.
 14:35:01 **15** Q. How is it you identified this as
 14:35:08 **16** anthophyllite when it falls within five different
 14:35:13 **17** d-spacing ranges?
 14:35:15 **18** A. Do I get to use the other data that's
 14:35:17 **19** generated, or is this one of those in a vacuum type
 14:35:19 **20** questions?
 14:35:20 **21** Q. Let's say in a vacuum. In a vacuum.
 14:35:22 **22** MR. CIRSCH: Object to form.
 14:35:23 **23** THE WITNESS: I wouldn't -- if I just had
 14:35:25 **24** the d-spacing without any information, I
 14:35:28 **25** wouldn't make that call. I wouldn't say that it

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14:35:30 **1** was anthophyllite. I would say it is consistent
 14:35:32 **2** with the typical amphibole d-spacing.
 14:35:34 **3 Q.** (By Mr. Chachkes) Okay. What other
 14:35:36 **4** amphibole in the Mineral Powder Diffraction File have
 14:35:44 **5** d-spacing ranges that span 5.23?
 14:35:48 **6 A.** Most of your amphibole minerals, both
 14:35:52 **7** monoclinic and orthorhombic, will have d-spacings in
 14:35:56 **8** this range.
 14:35:57 **9 Q.** What about nonamphiboles, are there
 14:36:01 **10** nonamphibole crystals that have d-spacings that the
 14:36:03 **11** range covers 5.23?
 14:36:05 **12 A.** I don't believe so.
 14:36:06 **13 Q.** The --
 14:36:31 **14 A.** Are we done with this one?
 14:36:32 **15 Q.** For now, yes.
 14:36:34 **16** Let's go to another exhibit. That's going
 14:36:37 **17** to be -- let her mark it up.
 14:36:41 **18 A.** Oh. Sorry.
 14:36:41 **19** MR. CHACHKES: That's going to be 17.
 14:36:43 **20** (Defendants' Exhibit 17 was marked for
 14:36:59 **21** identification.)
 14:36:59 **22 Q.** (By Mr. Chachkes) Is this the same sort
 14:37:02 **23** of document as 16? Is this one of the --
 14:37:04 **24 A.** Yes.
 14:37:04 **25 Q.** Okay. At the top, I see that for your
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14:38:39 **1** software?
 14:38:39 **2 A.** It's measured off the image that's been
 14:38:43 **3** calibrated.
 14:38:43 **4 Q.** Okay. It's measured off the image --
 14:38:45 **5 A.** Of the diffraction -- diffraction pattern
 14:38:48 **6** when you run the program, yes.
 14:38:48 **7 Q.** Okay. So it's measured by the program,
 14:38:50 **8** not somebody -- a human being with a ruler?
 14:38:51 **9 A.** Not anymore.
 14:38:53 **10 Q.** Okay. Used to be manual?
 14:38:54 **11 A.** Old days, yes.
 14:38:56 **12 Q.** Okay.
 14:38:56 **13 A.** When you actually took a negative and
 14:38:58 **14** every TEM lab had a dark room. And thank goodness
 14:39:03 **15** those days are over.
 14:39:04 **16 Q.** Can you provide me a reference in the
 14:39:07 **17** scientific literature that permits the identification
 14:39:16 **18** of an asbestos type strictly by an EDS -- sorry --
 14:39:25 **19** SAED pattern? Strike that. Let me ask that better.
 14:39:28 **20** Can you provide me a reference in the
 14:39:29 **21** published literature -- in the scientific literature
 14:39:31 **22** that sanctions identifying an asbestos simply by a
 14:39:39 **23** single axis SAED pattern?
 14:39:42 **24 A.** I think we already talked about that. I'm
 14:39:44 **25** not sure any scientific literature would say if
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158

14:37:23 **1** SAED analysis you have an equation to determine
 14:37:27 **2** spacing; do you see that?
 14:37:28 **3 A.** We have the camera constant divided by the
 14:37:34 **4** measured distance, yes.
 14:37:35 **5 Q.** Okay. And in your -- your methodology
 14:37:43 **6** determined the spacing by dividing the camera
 14:37:45 **7** constant by the measured distance; is that correct?
 14:37:48 **8 A.** Correct.
 14:37:49 **9 Q.** And why does MAS use this formula?
 14:37:52 **10 A.** That's the standard formula. You can --
 14:37:57 **11** the pixels is part of the computer program where you
 14:38:01 **12** could -- in the old days you'd actually measure it.
 14:38:03 **13 Q.** Can you provide a reference in the
 14:38:05 **14** scientific literature that reflects this equation?
 14:38:08 **15 A.** CrystalMaker has it.
 14:38:12 **16 Q.** CrystalMaker software; right?
 14:38:15 **17 A.** Software. Yes, somewhere I can find it
 14:38:17 **18** from the old days the formula for this.
 14:38:20 **19 Q.** Okay. You didn't cite anything in your
 14:38:22 **20** paper, correct, in your reports; correct?
 14:38:25 **21 A.** No, because it's a standard method that
 14:38:27 **22** all TEM labs do that do this, so.
 14:38:30 **23 Q.** The manual -- I'm sorry, the measured
 14:38:34 **24** distance than the denominator, that's manually
 14:38:38 **25** measured, or is that measured automatically by
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160

14:39:47 **1** you're only handed the information from one zone axis
 14:39:51 **2** diffraction pattern without the rest of the
 14:39:55 **3** information -- if you have a good zone axis and it
 14:40:01 **4** matches, you may be able to do the calculation.
 14:40:06 **5** So one zone axis -- you might be able to
 14:40:11 **6** do that if you're looking at between two different
 14:40:14 **7** minerals, say, a monoclinic versus an orthorhombic.
 14:40:19 **8** If you have no information whatsoever, I
 14:40:25 **9** don't know. I don't know if you could do it with
 14:40:27 **10** just one. I'd have to see.
 14:40:28 **11 Q.** Okay. The Mineral Powder Diffraction File
 14:40:32 **12** Data, is that a book I can go out in the library and
 14:40:36 **13** get?
 14:40:37 **14** MR. CIRSCH: Object to form.
 14:40:38 **15** THE WITNESS: I imagine, if it's only an
 14:40:39 **16** engineering library or a library at a
 14:40:42 **17** university. You can order it online.
 14:40:44 **18 Q.** (By Mr. Chachkes) Okay. It's generated
 14:40:46 **19** by somebody outside of MAS?
 14:40:48 **20 A.** No, this is not an MAS book. This is the
 14:40:54 **21** Mineral Powder Diffraction File Data Book. There's
 14:40:55 **22** an international standard for these types of cards
 14:40:59 **23** for the crystalline structure information.
 14:41:01 **24 Q.** Okay. What's the d-spacing for talc?
 14:41:15 **25 A.** I don't know.
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14:41:17 **1** Q. Is the d-spacing for talc within the
 14:41:22 **2** ranges we see here for -- in your chart for regulated
 14:41:26 **3** asbestos?
 14:41:26 **4** A. It's been a while since I've calculated
 14:41:30 **5** it, so I'd have to look that up.
 14:41:33 **6** Q. Why do you only have amphiboles in your
 14:41:41 **7** reference chart?
 14:41:46 **8** MR. CIRSCH: Object to form.
 14:41:47 **9** THE WITNESS: Because this is the 0-degree
 14:41:50 **10** amphibole diffraction pattern table.
 14:41:53 **11** Q. (By Mr. Chachkes) So are you assuming
 14:41:56 **12** going into looking at the SAED pattern that you're
 14:41:59 **13** looking at an amphibole, or you're saying the
 14:42:02 **14** amphibole patterns that you're looking at could
 14:42:04 **15** only -- the patterns you're looking at could only be
 14:42:06 **16** amphiboles?
 14:42:07 **17** A. There's no serpentine materials in here.
 14:42:12 **18** We've never measured chrysotile -- ever detected
 14:42:15 **19** chrysotile asbestos in any of the TEM analysis
 14:42:17 **20** because of the heavy liquid density separation.
 14:42:21 **21** And we don't go in blind or in a vacuum
 14:42:24 **22** when we do this. The chrysotile diffraction patterns
 14:42:29 **23** are very unique; the morphology is very unique. So
 14:42:33 **24** when we have amphiboles, we have a different chart.
 14:42:36 **25** Q. And again -- strike that.
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14:42:44 **1** I think I already asked this question, I
 14:42:48 **2** apologize if I'm asking it twice, but there are
 14:42:51 **3** nonamphiboles that have d-spacing within the ranges
 14:42:53 **4** we see in this chart, that is, crystals that are
 14:43:00 **5** nonamphiboles?
 14:43:00 **6** A. Most amphiboles will have d-spacings in
 14:43:03 **7** this range.
 14:43:04 **8** Q. My question is are there crystals that
 14:43:08 **9** aren't amphiboles and aren't serpentine that have
 14:43:11 **10** d-spacings in this range?
 14:43:13 **11** MR. CIRSCH: Object to form.
 14:43:14 **12** THE WITNESS: Nonamphiboles, not that I'm
 14:43:16 **13** aware of.
 14:43:16 **14** Q. (By Mr. Chachkes) For example, are there
 14:43:17 **15** any phyllosilicates that have d-spacing in these
 14:43:21 **16** ranges?
 14:43:21 **17** A. I don't believe so.
 14:43:22 **18** Q. Okay. You're stating to within a degree
 14:43:25 **19** of scientific certainty there aren't any --
 14:43:28 **20** MR. CIRSCH: Object --
 14:43:28 **21** THE WITNESS: When I say I don't believe
 14:43:29 **22** so, I don't think I hold that within a
 14:43:32 **23** reasonable degree of scientific certainty.
 14:43:33 **24** Again, I'm not looking at this in a
 14:43:36 **25** vacuum. If you have the amphibole d-spacing,
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14:43:39 **1** you have the appropriate chemistry. In these
 14:43:41 **2** cases they did zone axis for these particular
 14:43:44 **3** samples, for these two samples, so zone axis for
 14:43:52 **4** 1 and 2.
 14:43:55 **5** So, you know, I don't know how many
 14:43:58 **6** nonamphiboles are out there, but there's nothing
 14:44:02 **7** that I'm aware of if you're looking at all the
 14:44:04 **8** appropriate information and not looking at this
 14:44:07 **9** in a vacuum. None of this has ever -- you've
 14:44:10 **10** got to understand, none of this is ever done in
 14:44:12 **11** a vacuum. It's coupled with the chemistry,
 14:44:14 **12** coupled with the morphology, and also we have a
 14:44:16 **13** pretty good idea of what kind of matrix it's in.
 14:44:20 **14** Q. (By Mr. Chachkes) Okay.
 14:44:21 **15** A. It's cosmetic talc.
 14:44:22 **16** Q. So, I'm sorry, the methods you use to
 14:44:26 **17** identify asbestos are -- there's TEM, there's XRD,
 14:44:34 **18** and there's PLM. Are those the three, the big three?
 14:44:38 **19** A. Those are the -- really the only ones
 14:44:41 **20** is -- yeah, XRD is used, but the big two are TEM and
 14:44:47 **21** PLM.
 14:44:47 **22** Q. Okay. So is there anything in the
 14:44:52 **23** published scientific literature, peer-reviewed, that
 14:44:55 **24** says you can take an analysis under each of TEM, XRD,
 14:45:00 **25** and PLM, none of which conclusively point to a
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14:45:04 **1** regulated asbestos, but together you can determine
 14:45:07 **2** that it's a regulated asbestos?
 14:45:09 **3** MR. CIRSCH: Object to form.
 14:45:10 **4** THE WITNESS: Well, you're wrong about
 14:45:18 **5** this. XRD cannot point to anything. Can't tell
 14:45:21 **6** you if it's fibrous or not.
 14:45:24 **7** Polarized light microscopy by itself can
 14:45:26 **8** tell you if you have regulated asbestos.
 14:45:29 **9** Transmission electron microscopy itself can tell
 14:45:31 **10** you if it's regulated asbestos.
 14:45:34 **11** Both techniques have their strengths and
 14:45:38 **12** their weaknesses. This type of analysis, in my
 14:45:41 **13** opinion, needs the suite of techniques: the PLM,
 14:45:48 **14** the Blount PLM, and TEM.
 14:45:51 **15** For Vermont and Italian talc, I don't
 14:45:54 **16** think XRD serves any useful purpose.
 14:45:56 **17** Q. (By Mr. Chachkes) Okay. Let's just ask
 14:45:58 **18** the question again.
 14:46:00 **19** Now, the assumption of the hypothetical is
 14:46:02 **20** that your TEM result independently does not
 14:46:07 **21** conclusively point to a regulated asbestos, that your
 14:46:11 **22** XRD independently, that is, independent of the other
 14:46:14 **23** analyses, does not conclusively point to a regulated
 14:46:17 **24** asbestos, and that your PLM, similarly, independently
 14:46:20 **25** does not point to a regulated asbestos.
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14:46:22 **1** Can those three together conclusively
 14:46:28 **2** point to a regulated asbestos --
 14:46:31 **3** MR. CIRSCH: Object to form.
 14:46:32 **4** **Q.** (By Mr. Chachkes) -- each one making up
 14:46:33 **5** for the other's defects, in a way?
 14:46:36 **6** MR. CIRSCH: Object to form.
 14:46:36 **7** THE WITNESS: Well, there's no defects
 14:46:38 **8** like you state. I can't answer a question where
 14:46:40 **9** you're saying if all three are negative or
 14:46:42 **10** nondetects, because it's either nondetect or you
 14:46:45 **11** have identified the regulated asbestos.
 14:46:47 **12** So if you're telling me I have three
 14:46:49 **13** nondetects, then, no, I can't point to any
 14:46:52 **14** regulated asbestos in three nondetects.
 14:46:54 **15** **Q.** (By Mr. Chachkes) Okay.
 14:46:55 **16** **A.** Before you start, we've been going over an
 14:46:57 **17** hour. Can we go off the record?
 14:46:59 **18** **Q.** Can I maybe ask a couple more questions on
 14:47:01 **19** the same line, and I'll finish it up, if that's okay?
 14:47:03 **20** **A.** If you insist.
 14:47:04 **21** **Q.** I don't do this that often but --
 14:47:06 **22** **A.** That's fine.
 14:47:07 **23** **Q.** It's fascinating science.
 14:47:09 **24** Okay. So we agreed that the single zone
 14:47:16 **25** axis SAED pattern in a vacuum didn't point to
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14:47:18 **1** asbestos, right, even though you're saying it's
 14:47:20 **2** asbestos; right?
 14:47:22 **3** MR. CIRSCH: Object to form.
 14:47:23 **4** THE WITNESS: I don't think we agreed to
 14:47:24 **5** that. It depends on the zone that you get. If
 14:47:28 **6** you were to sit down and just look at that by
 14:47:32 **7** itself, a 302, you could probably eliminate a
 14:47:36 **8** lot.
 14:47:37 **9** But based with all the other information,
 14:47:39 **10** if the zone axis -- if you're getting a zone
 14:47:42 **11** axis, that means you have something that you got
 14:47:44 **12** a zone axis off of.
 14:47:45 **13** **Q.** (By Mr. Chachkes) Right.
 14:47:47 **14** **A.** But you're asking this hypothetical in a
 14:47:47 **15** vacuum. That's not what we do. I can't -- I've not
 14:47:52 **16** sat down and tried since graduate school where they
 14:47:54 **17** give you a mineral and just give you XRD pattern and
 14:47:57 **18** say go identify it. It's not something that we would
 14:48:01 **19** ever do for any of these analyses without the
 14:48:03 **20** morphology and without the chemistry.
 14:48:07 **21** **Q.** Okay. Last question. I'll ask it one
 14:48:11 **22** more time because I don't think I've gotten the
 14:48:13 **23** answer. If you want to give the same answer, it's
 14:48:16 **24** fine, but I'm giving you the opportunity to answer
 14:48:18 **25** this.
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14:48:19 **1** If I had a single crystal, I had a TEM
 14:48:21 **2** analysis that in a vacuum could point to many things,
 14:48:25 **3** not just asbestos, an XRD that could point to many
 14:48:29 **4** things, not just asbestos, and in a vacuum PLM that
 14:48:32 **5** could point to many things, not just asbestos, is
 14:48:35 **6** there any published peer-reviewed literature that I
 14:48:38 **7** can look at that says that's a situation where you
 14:48:41 **8** can combine the three and say that indeed is
 14:48:43 **9** asbestos?
 14:48:44 **10** MR. CIRSCH: Object to form.
 14:48:45 **11** THE WITNESS: I can't answer a
 14:48:46 **12** hypothetical that would never happen in a
 14:48:49 **13** working real lab that does this analysis. You
 14:48:51 **14** wouldn't sit there and go, I've run these three
 14:48:53 **15** and I have no clue what it is, now I'm going to
 14:48:57 **16** combine it all together and say, gee, that's
 14:48:58 **17** going to tell me.
 14:48:59 **18** I can't answer that hypothetical.
 14:49:03 **19** Somebody else will have to wade through that
 14:49:05 **20** one.
 14:49:06 **21** MR. CHACHKES: Okay. Let's take a break.
 14:49:08 **22** THE WITNESS: Thank you.
 14:49:08 **23** (Recess from 2:49 p.m. to 3:07 p.m.)
 15:07:57 **24** **Q.** (By Mr. Chachkes) So Dr. Longo, in your
 15:09:18 **25** diffraction verification documents, sometimes the
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15:09:25 **1** bottom -- that's not a good example.
 15:09:30 **2** Let's look at Exhibit 16, and let's look
 15:09:38 **3** at the first verification page. Sometimes in the
 15:09:41 **4** lower left, as we discussed, the zone axis
 15:09:44 **5** information is just not -- there's nothing filled in
 15:09:47 **6** there; right?
 15:09:47 **7** **A.** Correct.
 15:09:47 **8** **Q.** If it's blank, does that mean that this
 15:09:54 **9** particular image was not taken at a zone axis?
 15:09:57 **10** **A.** That is correct.
 15:09:58 **11** **Q.** Does MAS maintain nonasbestiform reference
 15:10:06 **12** samples for tremolite?
 15:10:08 **13** **A.** Well, yes and no. Most -- tremolite
 15:10:15 **14** standard has both. If you go to the one I brought --
 15:10:26 **15** and when we say nonasbestiform, we're saying it's not
 15:10:31 **16** meeting the 5-to-1 aspect ratio. That's less. It
 15:10:36 **17** certainly still could be asbestiform since it's
 15:10:39 **18** fibrous, but those we do not count in our analysis
 15:10:46 **19** using the TEM protocols, which are the standard
 15:10:50 **20** methods for scientists to identify asbestos. And you
 15:10:54 **21** can understand, these protocols are all heavily
 15:10:55 **22** vetted and peer-reviewed.
 15:11:03 **23** For example, my ASTM D5755 method took six
 15:11:07 **24** years to get it through the 125 scientists. And all
 15:11:07 **25** these methods have been published in the
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15:11:10 **1** peer-reviewed literature since any time anybody
 15:11:14 **2** publishes anything on the measurement of asbestos,
 15:11:16 **3** they will reference one of these protocols.
 15:11:19 **4** **Q.** Do you remember what my original question
 15:11:22 **5** was? So the question was do you have -- so let's
 15:11:24 **6** make it easier.
 15:11:25 **7** Do you have a bottle of nonasbestiform
 15:11:27 **8** tremolite at MAS?
 15:11:29 **9** **MR. CIRSCH:** Object to form.
 15:11:30 **10** **THE WITNESS:** I'm not sure a bottle of
 15:11:32 **11** nonasbestiform tremolite actually exists. You
 15:11:34 **12** typically find both. Somebody may call it
 15:11:37 **13** nonasbestiform; but when you go look through it,
 15:11:40 **14** or they say it's asbestos, you'll find
 15:11:42 **15** structures that are less than the 5-to-1 aspect
 15:11:47 **16** ratio. We don't count those.
 15:11:49 **17** **Q.** (By Mr. Chachkes) Do you have a bottle at
 15:11:52 **18** MAS of nonasbestos -- of tremolite where, on average,
 15:11:56 **19** its aspect ratio is below 5-to-1?
 15:11:59 **20** **MR. CIRSCH:** Object to form.
 15:12:00 **21** **THE WITNESS:** I'm not sure any such thing
 15:12:02 **22** exists. We don't have what doesn't exist.
 15:12:05 **23** **Q.** (By Mr. Chachkes) Okay. Do you have a
 15:12:06 **24** bottle in your office of anthophyllite where the
 15:12:11 **25** aspect ratio of the anthophyllite is all underneath
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170

15:12:14 **1** 5-to-1?
 15:12:15 **2** **MR. CIRSCH:** Object to form.
 15:12:16 **3** **THE WITNESS:** No. You have them that have
 15:12:19 **4** a range of aspect ratios, less than 5-to-1,
 15:12:23 **5** greater than 5-to-1. The average is typically
 15:12:25 **6** above 5-to-1.
 15:12:26 **7** **Q.** (By Mr. Chachkes) Okay. So you don't
 15:12:27 **8** have a bottle in your office of an amphibole that has
 15:12:37 **9** aspect ratios averaging under 5-to-1?
 15:12:41 **10** **MR. CIRSCH:** Object to form.
 15:12:42 **11** **THE WITNESS:** No. All the bottles with
 15:12:44 **12** standards we have are actual asbestos, but they
 15:12:46 **13** do have a portion that are below 5-to-1.
 15:12:48 **14** **Q.** (By Mr. Chachkes) And that's because it's
 15:12:50 **15** a big bell curve and some of that bell curve is over
 15:12:53 **16** on the less than 5-to-1 and some of it is on the
 15:12:55 **17** right?
 15:12:55 **18** **A.** That's correct. The NIST standard for
 15:12:58 **19** tremolite, I think the average -- even with the less
 15:13:00 **20** than 5-to-1, greater than 5-to-1, is around 10.
 15:13:04 **21** **Q.** Is your opinion that there's literature
 15:13:13 **22** supporting your position that you always find both
 15:13:16 **23** asbestiform and nonasbestiform amphiboles together?
 15:13:19 **24** **A.** I believe so.
 15:13:20 **25** **Q.** Can you tell me --

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15:13:22 **1** **A.** I can't tell you right now. I mean,
 15:13:24 **2** sometimes I anticipate cross-exam -- you know,
 15:13:28 **3** discovery depositions, but I'm not aware of any that
 15:13:32 **4** somebody states this is all, quote, nonasbestiform or
 15:13:35 **5** all cleavage fragments.
 15:13:38 **6** **Q.** Okay.
 15:13:38 **7** **A.** What I see -- and I'll have to dig it
 15:13:40 **8** up -- is that if you have one, you have the other.
 15:13:42 **9** **Q.** And you don't cite any such literature in
 15:13:45 **10** your expert report, do you?
 15:13:47 **11** **A.** No, sir, I'm not making the claim that --
 15:13:52 **12** what I'm doing in my expert report is saying here's
 15:13:55 **13** what we measured using the standard TEM, well-vetted
 15:14:00 **14** protocols for the identification of regulated
 15:14:02 **15** asbestos.
 15:14:02 **16** **Q.** Do you remember the question was about
 15:14:03 **17** whether --
 15:14:04 **18** **MR. CIRSCH:** I don't know if he finished
 15:14:05 **19** the answer yet.
 15:14:06 **20** **Q.** (By Mr. Chachkes) Yeah. Do you remember
 15:14:08 **21** the question?
 15:14:08 **22** **MR. CIRSCH:** I --
 15:14:08 **23** **THE WITNESS:** I remember --
 15:14:12 **24** **THE REPORTER:** One at a time.
 15:14:12 **25** **THE WITNESS:** I remember the question, but
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172

15:14:14 **1** the answer is it's not something that I was
 15:14:16 **2** relying on for my identification of regulated
 15:14:18 **3** asbestos. I'm relying on the peer-reviewed
 15:14:22 **4** publications for the standard TEM methods and
 15:14:26 **5** standard PLM methods.
 15:14:27 **6** **Q.** (By Mr. Chachkes) Do you have a standard
 15:14:28 **7** in your lab of an SAED readout for an amphibole with
 15:14:35 **8** ratios of less than 5-to-1 aspect ratios?
 15:14:39 **9** **MR. CIRSCH:** Object to form.
 15:14:46 **10** **Q.** (By Mr. Chachkes) So I'm not asking
 15:14:47 **11** whether you have incidentally such a thing but a
 15:14:49 **12** standard that you use to compare against?
 15:14:52 **13** **A.** Well, no, there's nothing to compare. The
 15:14:56 **14** less than 5-to-1 aspect ratio versus greater than
 15:14:59 **15** 5-to-1 aspect ratio will have the identical
 15:15:02 **16** d-spacings and identical diffraction patterns.
 15:15:05 **17** There's no difference in a, quote, less than 5-to-1
 15:15:08 **18** and greater than 5-to-1. You just will have the
 15:15:12 **19** exact same type of patterns for d-spacing, and if you
 15:15:14 **20** were to do a zone axis, you'll have the same zone
 15:15:18 **21** axis.
 15:15:18 **22** **Q.** Okay. So it's your opinion that for SAED,
 15:15:20 **23** a single nonasbestiform tremolite crystal and a
 15:15:24 **24** single asbestiform tremolite crystal will have the
 15:15:28 **25** same SAED patterns?

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15:15:31 **1** MR. CIRSCH: Object to form.
15:15:32 **2** THE WITNESS: Yes.
15:15:32 **3** **Q.** (By Mr. Chachkes) Okay. Is the same true
15:15:33 **4** for EDXA?
15:15:34 **5** **A.** It is.
15:15:34 **6** **Q.** Is the same true that the PLM will look
15:15:38 **7** the same for an asbestiform fragment and a
15:15:41 **8** nonasbestiform fragment of tremolite?
15:15:44 **9** **A.** Well, let's be clear. I'm not calling it
15:15:47 **10** asbestiform and nonasbestiform. I'm calling it --
15:15:49 **11** for the 22262-1, it's materials that are less than
15:15:54 **12** 3-to-1 aspect ratio. They'll have the same
15:16:00 **13** refractive indices, same information.
15:16:03 **14** There's no difference in the crystalline
15:16:04 **15** structure between what's less than 5-to-1 or less
15:16:08 **16** than whatever the aspect ratio is for a particular
15:16:11 **17** method that you're using. There's no difference.
15:16:14 **18** That's how you either count greater than
15:16:17 **19** or equal to 5-to-1 aspect ratio for TEM. Or in the
15:16:22 **20** PLM we're looking at bundles that typically are -- I
15:16:26 **21** think all of them were -- the individual fibers and
15:16:28 **22** the bundles were greater than 20-to-1.
15:16:31 **23** Where we draw the line is in the method
15:16:34 **24** when it says anything less than 3-to-1 is not
15:16:36 **25** counted. And that's what we do. We call them
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174

15:16:38 **1** cleavage fragments.
15:16:39 **2** **Q.** Have you ever heard anyone distinguishing
15:16:41 **3** asbestiform and nonasbestiform tremolite by virtue of
15:16:44 **4** whether it has parallel fibers?
15:16:48 **5** MR. CIRSCH: Object to form.
15:16:49 **6** THE WITNESS: Yes. If it is a bundle, by
15:16:52 **7** definition, it is asbestiform. Both Ann Wylie
15:16:56 **8** and both the 22262-1 and the R-93 as well as --
15:17:02 **9** and TEM's different. You take the overall
15:17:05 **10** aspect ratio of a bundle width to length.
15:17:09 **11** That's how we distinguish between a regulated
15:17:13 **12** asbestos fiber and not. But even in TEM, if it
15:17:15 **13** is a bundle, hence it is asbestiform.
15:17:17 **14** **Q.** (By Mr. Chachkes) Okay. Would the SAED
15:17:19 **15** pattern for tremolite with parallel fibers and
15:17:22 **16** tremolite that does not exhibit parallel fibers be
15:17:26 **17** the same?
15:17:27 **18** **A.** Yes.
15:17:28 **19** **Q.** Okay. Same --
15:17:29 **20** **A.** For the right orientation, same
15:17:31 **21** orientation, yeah. Yes.
15:17:32 **22** **Q.** What about on all three orientations?
15:17:35 **23** **A.** I haven't done it on all three
15:17:37 **24** orientations because we don't count those if it has
15:17:40 **25** less than the counting aspects, and we typically only
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15:17:43 **1** do d-spacings following the peer-reviewed published
15:17:46 **2** protocols.
15:17:47 **3** **Q.** Okay. Do you have any opinion on whether
15:17:50 **4** a tremolite with parallel fibers and a tremolite that
15:17:53 **5** does not have parallel fibers would indeed have
15:17:56 **6** identical d-spacings on all three axes for SAED?
15:18:03 **7** **A.** We haven't done three-axis SAEDs for
15:18:08 **8** something that is not counted as a regulated asbestos
15:18:11 **9** fiber. Single individual fibers will have the same
15:18:16 **10** d-spacing range, will have the same selected area
15:18:20 **11** electron diffraction zone axis if you go to the
15:18:23 **12** particular orientation.
15:18:25 **13** **Q.** So I'm going to ask again because my
15:18:29 **14** question's only about -- it's not about what you've
15:18:30 **15** done, it's about what something looks like.
15:18:37 **16** Does the SAED for tremolite that has
15:18:39 **17** parallel fibers look exactly the same on three axes
15:18:44 **18** as a tremolite that does not have parallel fibers?
15:18:48 **19** MR. CIRSCH: Object to form.
15:18:49 **20** **Q.** (By Mr. Chachkes) Putting aside whether
15:18:51 **21** you've done it or not, as a matter of science, are
15:18:54 **22** they the same? You can say you don't know, but I
15:18:56 **23** need that question answered.
15:18:57 **24** MR. CIRSCH: Object to form.
15:18:58 **25** THE WITNESS: It should be the same. But
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176

15:18:59 **1** it's not something that we do, because it's not
15:19:01 **2** part of the peer-reviewed published standard
15:19:04 **3** protocols. When it is -- when it is not
15:19:10 **4** parallel sides or it doesn't meet the 5-to-1
15:19:12 **5** aspect ratio, it is not recorded.
15:19:15 **6** **Q.** (By Mr. Chachkes) Do you know of any
15:19:17 **7** published literature that confirms that they should
15:19:20 **8** be the same?
15:19:21 **9** **A.** It's not -- I believe so, yes.
15:19:35 **10** **Q.** What?
15:19:35 **11** **A.** Again, it has to do with surface charts.
15:19:41 **12** I don't recall the citation.
15:19:42 **13** **Q.** Okay. Sitting here today you can't give
15:19:44 **14** me a citation for that?
15:19:45 **15** **A.** No, sir, I did not anticipate that we were
15:19:48 **16** going to be debating non -- debating asbestos
15:19:54 **17** minerals that we don't count or don't put into our
15:19:58 **18** report.
15:19:58 **19** **Q.** Okay. What about under PLM, does a
15:20:03 **20** tremolite that has parallel fibers look the same
15:20:07 **21** under PLM as a tremolite that does not have parallel
15:20:11 **22** fibers?
15:20:11 **23** **A.** No.
15:20:12 **24** **Q.** What about TEM when you're looking at just
15:20:15 **25** morphology, do the two look the same?
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15:20:18 **1** **A.** If it's not parallel, it's not going to
 15:20:20 **2** look the same. If it's PLM and you can't see the
 15:20:22 **3** individual fibers in the bundles, it's not going to
 15:20:25 **4** look the same.
 15:20:25 **5** **Q.** Okay. Do you have a standard reference
 15:20:28 **6** standard for PLM for tremolite that does not have
 15:20:35 **7** parallel fibers?
 15:20:36 **8** **A.** And again, I guess we're going back to a
 15:20:39 **9** bottle of cleavage fragments. No. But we do
 15:20:42 **10** routinely see tremolite/actinolite cleavage fragments
 15:20:48 **11** that are less than 3-to-1 aspect ratio that is
 15:20:51 **12** recorded in -- and they have the same properties that
 15:20:55 **13** give us the refractive indices and identification.
 15:20:57 **14** Otherwise, you wouldn't be able to identify it.
 15:20:59 **15** **Q.** Do you have a standard TEM photograph
 15:21:03 **16** showing morphology that is for tremolite that does
 15:21:08 **17** not exhibit parallel fibers?
 15:21:12 **18** **A.** I don't know if we have recorded typical
 15:21:17 **19** nonparallel sides on a TEM structure that has the
 15:21:22 **20** same chemistry, but we do not record any of our
 15:21:26 **21** analyses as per the peer-reviewed published
 15:21:30 **22** protocols.
 15:21:31 **23** **Q.** Okay. Would your answers be the same for
 15:21:36 **24** anthophyllite?
 15:21:36 **25** **A.** It would be the same.

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15:23:11 **1** **Q.** (By Mr. Chachkes) Let me just ask you the
 15:23:15 **2** straight question. Did your November report confirm
 15:23:17 **3** that SAED patterns confirmed regulated asbestos in
 15:23:21 **4** J&J bottles of talc?
 15:23:25 **5** **MR. CIRSCH:** Object to form.
 15:23:25 **6** **THE WITNESS:** I'd have to see the context
 15:23:27 **7** because it has to be all the information that's
 15:23:30 **8** done. Regulated asbestos goes with the counting
 15:23:34 **9** rules, that's the first -- counting rules on the
 15:23:36 **10** structure, parallel sides, the diffraction
 15:23:40 **11** pattern, and the chemistry. That's how the
 15:23:43 **12** protocol says to do this. Not just an SAED by
 15:23:48 **13** itself, not an EDS by itself, and not the
 15:23:52 **14** morphology by itself. You have to use all three
 15:23:55 **15** for TEM analysis. That's how the protocol goes.
 15:24:03 **16** **MR. CHACHKES:** Okay. Let me ask you in
 15:24:04 **17** this way. Let's mark this next exhibit.
 15:24:04 **18** (Defendants' Exhibit 18 was marked for
 15:24:23 **19** identification.)
 15:24:23 **20** **Q.** (By Mr. Chachkes) So can you confirm that
 15:24:25 **21** Exhibit 18 is one of your SAEDs?
 15:24:29 **22** **MR. CIRSCH:** On the back of here I see
 15:24:30 **23** some -- okay.
 15:24:30 **24** **MS. TROVATO:** On the back -- sorry.
 15:24:30 **25** **MR. CHACHKES:** Here. Take mine.

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15:21:38 **1** **Q.** Okay. For all those questions whether you
 15:21:40 **2** keep the separate standard?
 15:21:42 **3** **MS. O'DELL:** Object to the form.
 15:21:44 **4** **THE WITNESS:** If -- we don't keep a
 15:21:45 **5** separate standard because we do not record
 15:21:49 **6** amphibole structures that have the same
 15:21:51 **7** chemistry, same diffraction pattern types, that
 15:21:55 **8** are not part of the counting protocols for these
 15:21:58 **9** peer-reviewed protocols for the analysis.
 15:22:01 **10** **Q.** (By Mr. Chachkes) Taking you back to your
 15:22:05 **11** November reports, your November 14 reports, it's my
 15:22:09 **12** understanding that in it you confirmed that -- that
 15:22:28 **13** in it you confirm that the SAED confirmed regulated
 15:22:33 **14** asbestos; is that correct?
 15:22:35 **15** **MR. CIRSCH:** Object to form.
 15:22:36 **16** **THE WITNESS:** We confirmed that the -- I
 15:22:42 **17** don't believe we said it like that. What we
 15:22:44 **18** confirmed is following the peer-reviewed
 15:22:48 **19** published protocols, either for TEM or polarized
 15:22:53 **20** light microscopy using the methodology that
 15:22:56 **21** takes you through the steps to determine if it's
 15:22:59 **22** regulated asbestos, primarily the counting rule,
 15:23:02 **23** the chemistry, and the crystalline structure.
 15:23:05 **24** That's why they have all three. None of this is
 15:23:08 **25** done in a vacuum. That's what we did.

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15:24:32 **1** **MR. CIRSCH:** I wanted to make sure that
 15:24:32 **2** you --
 15:24:38 **3** **Q.** (By Mr. Chachkes) So can you confirm
 15:24:41 **4** Exhibit 18 is of your SAED patterns?
 15:24:46 **5** **MS. O'DELL:** Would you direct us? Is
 15:24:47 **6** there a specific page in his November report
 15:24:48 **7** that you're referring to?
 15:24:50 **8** **THE WITNESS:** I see it right here. It's
 15:24:51 **9** the M68233-001-001, which matches the M number
 15:25:00 **10** and fiber number. It says that we -- date of
 15:25:04 **11** photo was 2/14/2018. So that is one of our
 15:25:09 **12** diffraction patterns.
 15:25:10 **13** **Q.** (By Mr. Chachkes) Okay. Does this
 15:25:14 **14** confirm that there is anthophyllite in J&J talc,
 15:25:21 **15** Exhibit 18 alone?
 15:25:23 **16** **A.** You keep saying alone, and you keep saying
 15:25:26 **17** in a vacuum. That's not how it's done. The
 15:25:30 **18** methodology doesn't say take the SAED alone. We have
 15:25:34 **19** the chemistry that goes with it and the morphology.
 15:25:36 **20** There's a reason it takes you through those steps.
 15:25:39 **21** **Q.** Okay. So the question is does Exhibit 18
 15:25:45 **22** alone confirm anthophyllite?
 15:25:49 **23** **MR. CIRSCH:** Object.
 15:25:50 **24** **Q.** (By Mr. Chachkes) It's just yes or no.
 15:25:50 **25** **MR. CIRSCH:** It's not yes or no.

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15:25:51 **1** THE WITNESS: It's not yes or no. It's --
 15:25:54 **2** again, my answer is you do not look at these
 15:25:57 **3** patterns alone. You're using a peer-reviewed
 15:26:01 **4** published protocol that walks you through
 15:26:04 **5** morphology, EDXA, and a diffraction pattern.
 15:26:09 **6** That's how the protocol goes.
 15:26:11 **7** It's not my protocol. These are the
 15:26:13 **8** protocols for the ISO methods, for the AHERA
 15:26:16 **9** methods, the ASTM -- TEM methods. There is a
 15:26:19 **10** reason you do all of them.
 15:26:21 **11** Q. (By Mr. Chachkes) Right. So it's my
 15:26:23 **12** understanding that this is an answerable question.
 15:26:25 **13** If you say it's completely unanswerable, tell me.
 15:26:30 **14** And I understand you don't like it when I've asked
 15:26:32 **15** you about something in a vacuum, but the question
 15:26:34 **16** stands. In a vacuum, Exhibit 18, is that a uniquely
 15:26:37 **17** anthophyllite pattern?
 15:26:37 **18** MR. CIRSCH: Object to form. That's been
 15:26:39 **19** asked and answered.
 15:26:40 **20** THE WITNESS: And my answer stands.
 15:26:41 **21** Q. (By Mr. Chachkes) Okay. And that
 15:26:43 **22** answer's what? If you're not going to answer, just
 15:26:48 **23** tell me.
 15:26:48 **24** MS. O'DELL: He's already answered.
 15:26:48 **25** MR. CIRSCH: He's already answered the
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182

15:26:51 **1** question.
 15:26:51 **2** THE WITNESS: My answer stands. The
 15:26:53 **3** previous answer.
 15:26:53 **4** Q. (By Mr. Chachkes) Okay. Now, I'm looking
 15:26:54 **5** at Exhibit 17, which I believe corresponds to this;
 15:26:58 **6** right?
 15:26:58 **7** A. Yes.
 15:26:59 **8** Q. Okay. Page 1 of the -- the first
 15:27:03 **9** verification, it shows date verified as 2/14. Do you
 15:27:07 **10** see that?
 15:27:07 **11** A. Correct.
 15:27:08 **12** Q. That means on the same day of the photo
 15:27:12 **13** you actually put this picture into the software to
 15:27:14 **14** determine the d-spacing; correct?
 15:27:16 **15** A. That's correct.
 15:27:17 **16** Q. Okay. For many of the SAED patterns that
 15:27:21 **17** have been produced in this case, the verification
 15:27:24 **18** came after your November report; correct?
 15:27:27 **19** A. That's correct.
 15:27:27 **20** Q. Some of them came after -- came as late as
 15:27:33 **21** January; right?
 15:27:33 **22** A. That may be possible.
 15:27:34 **23** Q. Okay. So you were using, for the purposes
 15:27:36 **24** of at least the November report, some of the EDSA
 15:27:41 **25** patterns you had not run d-spacing on?
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15:27:44 **1** MR. CIRSCH: Object to form.
 15:27:45 **2** THE WITNESS: That's correct. Well, we
 15:27:46 **3** had taken the data, and the photograph was
 15:27:50 **4** taken. You know, when the verification came
 15:27:52 **5** through, it may have been done later.
 15:27:54 **6** Q. (By Mr. Chachkes) Yeah, and I might have
 15:27:56 **7** misspoke.
 15:27:56 **8** So what I'm saying is that for some of the
 15:27:58 **9** samples in the November report, you had not run the
 15:28:01 **10** d-spacing for the SAED; is that correct?
 15:28:04 **11** A. That's possible.
 15:28:05 **12** Q. Okay. Is the d-spacing important to
 15:28:08 **13** determining whether SAED is pointing towards a
 15:28:11 **14** regulated asbestos?
 15:28:13 **15** MR. CIRSCH: Object to form.
 15:28:14 **16** THE WITNESS: It's all important. If you
 15:28:16 **17** do this long enough, you can look at it and say
 15:28:18 **18** that's an amphibole diffraction pattern. But
 15:28:20 **19** the verification just solidifies it.
 15:28:23 **20** Q. (By Mr. Chachkes) Okay. Why did you run
 15:28:30 **21** verifications after your first report and as late as
 15:28:36 **22** January for SAED verifications?
 15:28:41 **23** MR. CIRSCH: Object to form.
 15:28:42 **24** THE WITNESS: Because they've all been
 15:28:44 **25** taken, just getting to them. Certainly if it
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184

15:28:46 **1** didn't verify it, then we'd have something else
 15:28:49 **2** to talk about today.
 15:28:50 **3** Q. (By Mr. Chachkes) How many particles did
 15:29:02 **4** your analyst conduct zone axis determinations on?
 15:29:05 **5** MR. CIRSCH: Object to form.
 15:29:06 **6** THE WITNESS: How many fibrous structures?
 15:29:08 **7** Q. (By Mr. Chachkes) Yes.
 15:29:09 **8** A. I haven't counted them up.
 15:29:10 **9** Q. Could it be about a dozen?
 15:29:12 **10** MR. CIRSCH: Object to form.
 15:29:13 **11** THE WITNESS: Again, I haven't counted
 15:29:14 **12** them up.
 15:29:15 **13** Q. (By Mr. Chachkes) Okay. And earlier we
 15:29:18 **14** talked about how it's difficult to distinguish talc
 15:29:24 **15** and anthophyllite with EDXA; right?
 15:29:30 **16** MR. CIRSCH: Object to form.
 15:29:31 **17** THE WITNESS: I didn't say it was
 15:29:32 **18** difficult. What I said was you would not
 15:29:35 **19** identify it by just EDXA. You would use the
 15:29:38 **20** procedures in place, all the procedures, to make
 15:29:41 **21** that determination if you have fibrous talc
 15:29:44 **22** versus anthophyllite.
 15:29:44 **23** Q. (By Mr. Chachkes) And when you say all
 15:29:45 **24** the procedures, you mean procedures above and beyond
 15:29:47 **25** EDXA?
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15:29:48 **1** A. Procedures that are stated in the
 15:29:52 **2** peer-reviewed protocols that we use.
 15:29:54 **3** Q. That are above and beyond EDXA?
 15:29:57 **4** MR. CIRSCH: Object to form.
 15:29:59 **5** THE WITNESS: Well, they're all above and
 15:30:02 **6** beyond EDXA. None of this is done in a vacuum.
 15:30:05 **7** No analyst is just looking at the EDXA and not
 15:30:06 **8** following the protocols as published in the
 15:30:07 **9** peer-reviewed literature for making these
 15:30:09 **10** determinations.
 15:30:10 **11** Q. (By Mr. Chachkes) You were saying that a
 15:30:11 **12** way to tell the difference between talc and
 15:30:15 **13** anthophyllite in SAED is to tilt the goniometer --
 15:30:27 **14** A. Goniometer.
 15:30:28 **15** Q. -- goniometer; is that right?
 15:30:30 **16** A. That's correct.
 15:30:31 **17** Q. Okay. In every instance -- are there
 15:30:41 **18** instances where you looked at a particle for a J&J
 15:30:47 **19** sample in the MDL and tilted the gon --
 15:30:56 **20** A. Goniometer.
 15:30:56 **21** Q. -- goniometer and determined, oh, well,
 15:30:58 **22** that's talc?
 15:30:59 **23** A. That's certainly possible.
 15:31:06 **24** Q. Okay. Is it that you don't know because
 15:31:09 **25** your analyst would have done it and not reported that
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186

15:31:11 **1** to you?
 15:31:12 **2** MR. CIRSCH: Object to form.
 15:31:12 **3** THE WITNESS: Well, we were only taking a
 15:31:14 **4** random talc verification of some of these for
 15:31:17 **5** one fiber, it's at the end of the -- each of the
 15:31:21 **6** analyses where there was fibrous talc present in
 15:31:24 **7** the TEM, there is an SAED, EDS, and a picture
 15:31:30 **8** showing the morphology.
 15:31:31 **9** These particular ones are not talc. These
 15:31:36 **10** are zone axis. This happens to be the
 15:31:41 **11** historical 1978 that was produced through
 15:31:47 **12** Lanier, and these zone axis orientations are not
 15:31:52 **13** what the so-called look-alike zone axis for the
 15:31:57 **14** talc fiber.
 15:31:59 **15** Q. (By Mr. Chachkes) I'm sorry, you're
 15:32:00 **16** saying that what's in Exhibit 17 are non-MDL samples?
 15:32:06 **17** A. No, it is an MDL sample. I said it is an
 15:32:08 **18** MDL sample.
 15:32:09 **19** Q. Oh, okay. When you said produced through
 15:32:11 **20** Lanier, I didn't understand what you meant there.
 15:32:14 **21** A. Well, it went to Lanier and went to us.
 15:32:18 **22** Q. Okay.
 15:32:18 **23** A. The 1978 --
 15:32:21 **24** Q. Got it.
 15:32:25 **25** A. -- two samples for one container. I think
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15:32:25 **1** it's JBP-084.
 15:32:31 **2** Q. Earlier we talked about how cummingtonite
 15:32:39 **3** and anthophyllite have the same chemistry; do you
 15:32:42 **4** remember that?
 15:32:42 **5** A. Yes.
 15:32:42 **6** Q. One way to tell them apart is to determine
 15:32:45 **7** the crystal system of the particle?
 15:32:47 **8** A. Correct. You could go in and do zone axis
 15:32:50 **9** and get a monoclinic versus the orthorhombic.
 15:32:53 **10** Q. Okay. So anthophyllite is orthorhombic,
 15:32:56 **11** and cummingtonite is monoclinic?
 15:32:59 **12** A. That is correct.
 15:32:59 **13** Q. Okay. Did you do the analysis to
 15:33:03 **14** determine whether what you were looking at and
 15:33:07 **15** thought might be anthophyllite to see whether it was
 15:33:10 **16** monoclinic and thus cummingtonite?
 15:33:12 **17** A. No, we don't do that. We just call it the
 15:33:15 **18** anthophyllite solid solution series since both
 15:33:18 **19** anthophyllite, cummingtonite, and grunerite are
 15:33:22 **20** regulated asbestos.
 15:33:23 **21** Q. Okay.
 15:33:23 **22** A. There's no -- unless you want to do that
 15:33:26 **23** for some reason, there's no need to go any further.
 15:33:28 **24** Q. Okay. So everything in your expert report
 15:33:31 **25** that you identify as anthophyllite could very well be
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188

15:33:36 **1** cummingtonite, but your position it doesn't matter?
 15:33:39 **2** MR. CIRSCH: Object to form.
 15:33:40 **3** THE WITNESS: Well, everything could be
 15:33:42 **4** anthophyllite and it still doesn't matter. You
 15:33:45 **5** know, if you use the analogy, well, I found the
 15:33:48 **6** weed and it's a particular weed that is a
 15:33:50 **7** problem and we need to get rid of it, now I want
 15:33:53 **8** to go look and see what color roots it has
 15:33:55 **9** because the weed itself all looks the same.
 15:33:58 **10** This particular one, these zone axes are
 15:34:00 **11** anthophyllite for, I believe, in these two --
 15:34:05 **12** this was the one that Dr. Sanchez says was
 15:34:08 **13** cummingtonite, and so we went back and did zone
 15:34:11 **14** axis just some time ago. And actually, these
 15:34:14 **15** two structures are in fact anthophyllite.
 15:34:17 **16** Q. (By Mr. Chachkes) You mean you do zone
 15:34:19 **17** axis to determine whether it was orthorhombic or
 15:34:22 **18** monoclinic?
 15:34:23 **19** A. Well, we did zone axis to make sure that
 15:34:25 **20** it was orthorhombic and had the reflections, that it
 15:34:28 **21** had the crystalline orientation specific for
 15:34:30 **22** orthorhombic anthophyllite.
 15:34:32 **23** Q. Did you produce the material that shows
 15:34:33 **24** that sample to be orthorhombic?
 15:34:36 **25** A. Number 17.
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15:34:37 **1** Q. That's number 17? Okay.
 15:34:40 **2** A. The first one, especially. I know for the
 15:34:42 **3** 301.
 15:34:44 **4** Q. And for the other -- it's fair to say that
 15:34:50 **5** most of the particles in this case that you've
 15:34:52 **6** identified as anthophyllite could very well be
 15:34:55 **7** cummingtonite, but you didn't make the distinction?
 15:34:59 **8** MR. CIRSCH: Object to form.
 15:34:59 **9** Q. (By Mr. Chachkes) Putting aside whether
 15:35:01 **10** it matters or not.
 15:35:02 **11** MR. CIRSCH: Object to form.
 15:35:03 **12** THE WITNESS: Well, most of these
 15:35:06 **13** elongated particles, these asbestiform bundles,
 15:35:10 **14** could be anthophyllite --
 15:35:11 **15** Q. (By Mr. Chachkes) The ones --
 15:35:12 **16** MR. CIRSCH: Hold on.
 15:35:13 **17** THE WITNESS: -- versus cummingtonite.
 15:35:15 **18** But it's a difference without any consequence.
 15:35:18 **19** They're both regulated asbestos.
 15:35:19 **20** Q. (By Mr. Chachkes) Right. Putting aside
 15:35:21 **21** the difference, okay -- this is just a question that
 15:35:25 **22** should be very simple -- most of the part -- except
 15:35:28 **23** for the one you went back and verified whether it was
 15:35:31 **24** orthorhombic, most of the particles you identify in
 15:35:34 **25** your report could either be -- that you identify as
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190

15:35:37 **1** anthophyllite could either be anthophyllite or
 15:35:39 **2** cummingtonite, putting aside whether it even matters;
 15:35:42 **3** is that a correct statement?
 15:35:43 **4** MR. CIRSCH: Object to form.
 15:35:44 **5** THE WITNESS: No. You don't know if most
 15:35:46 **6** of the particles could. It could be this, it
 15:35:48 **7** could be that. It could be mostly all
 15:35:50 **8** anthophyllite.
 15:35:52 **9** You know, you think it's all
 15:35:54 **10** cummingtonite. But you're right, it doesn't
 15:35:55 **11** matter because I identified them as the
 15:36:01 **12** anthophyllite solid solution series.
 15:36:02 **13** Q. (By Mr. Chachkes) Okay. Is there
 15:36:03 **14** literature calling cummingtonite part of the
 15:36:05 **15** anthophyllite solid solution series?
 15:36:05 **16** A. Lots of it.
 15:36:05 **17** Q. Okay. Can you cite one for me? Let's
 15:36:10 **18** start with this. Any cited in your report?
 15:36:11 **19** A. Yes.
 15:36:12 **20** Q. Okay. Can you --
 15:36:14 **21** A. Can I show it to you?
 15:36:16 **22** Q. Yes, show it to me.
 15:36:18 **23** A. And I produced it in other J&J.
 15:36:37 **24** It's easier for me just to look through
 15:36:41 **25** the references and find it for you.
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15:36:43 **1** Q. That's okay. That's fine. We'll just
 15:36:44 **2** leave it as is.
 15:36:45 **3** A. I believe it's -- let me just make sure
 15:36:46 **4** it's in here.
 15:36:55 **5** I t's reference 23, Manual of Mineralogy,
 15:36:58 **6** 21st Edition, Revised, Cornelis Klein and
 15:37:04 **7** Cornelius S. Hurlbut, Jr., from John Wiley & Sons,
 15:37:07 **8** and it's on page about 256, if I remember correctly.
 15:37:11 **9** Q. Okay. What other mono -- okay.
 15:37:15 **10** If your EDS doesn't tell you whether -- if
 15:37:19 **11** you haven't determined whether what you're looking at
 15:37:21 **12** is orthorhombic or monoclinic, are there any other
 15:37:24 **13** minerals that they could be that are indeed also
 15:37:28 **14** monoclinic?
 15:37:29 **15** A. No. Not after we do the full suite of
 15:37:31 **16** analyses. It's one of these regulated asbestos types
 15:37:34 **17** for the anthophyllite solid solution series.
 15:37:37 **18** Q. Okay.
 15:37:37 **19** A. These have been identified to the degree
 15:37:42 **20** necessary to make that statement.
 15:37:43 **21** Q. Okay. Just -- and we're going to ask a
 15:37:45 **22** question in a vacuum, and I understand all your
 15:37:48 **23** objections to answering questions about science in a
 15:37:50 **24** vacuum, but it's important to us.
 15:37:53 **25** If you have an SAED pattern where you
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192

15:37:56 **1** didn't determine whether it's orthorhombic or not,
 15:38:00 **2** just looking at that pattern, in a vacuum, without
 15:38:03 **3** your other information, is it possible -- can you
 15:38:08 **4** exclude -- is it possible that correlates to any
 15:38:12 **5** other monoclinic minerals?
 15:38:14 **6** MR. CIRSCH: Object to form.
 15:38:15 **7** THE WITNESS: I've already answered this
 15:38:16 **8** question.
 15:38:16 **9** We don't look at it in a vacuum. You're
 15:38:18 **10** asking me to look at things in a vacuum that are
 15:38:21 **11** not part of the peer-reviewed published
 15:38:25 **12** identification protocols for asbestos.
 15:38:27 **13** That's what we do. We look at and follow
 15:38:29 **14** the procedures that are in the protocols. So
 15:38:33 **15** when we do this analysis, especially for
 15:38:36 **16** anthophyllite, we're looking at morphology,
 15:38:38 **17** we're looking at chemistry, and we're looking at
 15:38:40 **18** selected area electron diffraction.
 15:38:43 **19** Q. (By Mr. Chachkes) So --
 15:38:43 **20** MR. CIRSCH: Hold on.
 15:38:44 **21** THE WITNESS: And that's my answer.
 15:38:45 **22** Q. (By Mr. Chachkes) So you understand I'm
 15:38:46 **23** allowed to ask questions that aren't specifically
 15:38:49 **24** correlating to something in a regulation; right? I
 15:38:51 **25** can ask about general science. You understand that;
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15:38:53 **1** right?

15:38:54 **2** MR. CIRSCH: Object to form. He can give

15:38:56 **3** you an answer --

4 Q. (By Mr. Chachkes) Yes or no?

15:38:57 **5** MR. CIRSCH: -- he thinks is appropriate.

15:38:59 **6** Q. (By Mr. Chachkes) It's a yes or no

15:39:01 **7** question.

15:39:01 **8** A. Well, yes, you can ask any question you

15:39:04 **9** want. But, no, I don't think it's appropriate to ask

15:39:07 **10** questions that is not part of how we identify and ask

15:39:12 **11** in a vacuum. So my answer stands.

15:39:13 **12** Q. Okay. So I'll ask you again, and if you

15:39:14 **13** don't want to answer, you can give me the same

15:39:16 **14** circular answer, but I'm going to ask you again.

15:39:19 **15** MR. CIRSCH: Object to the commentary on

15:39:21 **16** the record, Alex. There's a lot of it.

15:39:23 **17** Q. (By Mr. Chachkes) If the -- looking at --

15:39:26 **18** if you haven't determined whether something is

15:39:29 **19** orthorhombic or not, looking at the SAED pattern in a

15:39:36 **20** vacuum, could it correspond to other minerals besides

15:39:40 **21** cummingtonite and anthophyllite?

15:39:43 **22** MR. CIRSCH: Object to form.

15:39:45 **23** THE WITNESS: That's not how we have done

15:39:46 **24** this analysis for every one of these samples

15:39:49 **25** that we're dealing with in TEM, for the 100,
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194

15:39:52 **1** almost 200 fibers and bundles that we've

15:39:55 **2** identified. We have used the peer-reviewed

15:39:59 **3** standard published protocol specifically to

15:40:02 **4** identify regulated asbestos. We didn't look at

15:40:05 **5** anything in a vacuum. We don't do that.

15:40:07 **6** Q. (By Mr. Chachkes) Okay. Putting that

15:40:09 **7** aside, this is just a matter of EDSA science. EDSA

15:40:14 **8** science tells me that Exhibit 18 looked at in

15:40:19 **9** isolation could correspond to many minerals; right?

15:40:25 **10** MS. O'DELL: Objection.

15:40:25 **11** Q. (By Mr. Chachkes) Just EDSA science?

15:40:28 **12** A. Again, we're not dealing with many

15:40:30 **13** minerals. We're dealing with regulated asbestos in a

15:40:33 **14** talc deposit that has the ability to form these

15:40:37 **15** billions of years ago under temperature and pressure.

15:40:40 **16** We're using protocols that are specifically designed

15:40:42 **17** to identify regulated asbestos. And that's what we

15:40:45 **18** do.

19 Q. Okay.

15:40:47 **20** A. Asking things in a vacuum or hypotheticals

15:40:49 **21** is not what we did.

15:40:51 **22** MR. CHACHKES: Okay. How much time do we

15:40:55 **23** have left on the tape?

15:40:59 **24** THE VIDEOGRAPHER: 17.

15:41:00 **25** MR. CHACHKES: Why don't we just swap out
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15:41:02 **1** the tape and we don't have to take a break.

15:41:13 **2** (Recess from 3:41 p.m. to 4:01 p.m.)

16:02:00 **3** Q. (By Mr. Chachkes) Dr. Longo, the court

16:03:00 **4** reporter informed me that a couple of times I

16:03:01 **5** mispronounced EDXA as EDSA. Did you understand when

16:03:08 **6** I said EDSA to mean EDXA?

16:03:09 **7** A. Yes. Energy dispersive spectroscopy

16:03:12 **8** analysis is also well known.

9 Q. Okay.

16:03:14 **10** A. People have different acronyms for it, so

16:03:18 **11** it's fine. I think I was repeating what you were

16:03:20 **12** saying.

16:03:20 **13** Q. Okay. So is it your position that

16:03:24 **14** reporting analytical sensitivity by weight percent

16:03:27 **15** does not provide any useful information for

16:03:30 **16** determining potential airborne exposure to asbestos

16:03:32 **17** structures?

16:03:32 **18** A. Yes.

16:03:33 **19** Q. Is it your position that structures per

16:03:37 **20** gram data is the most useful for potential airborne

16:03:40 **21** exposure?

16:03:40 **22** A. Yes.

16:03:41 **23** Q. And in your report, in support of that

16:03:44 **24** proposition, you cite ISO 10312; correct?

16:03:50 **25** A. Correct. And it's in both of the ISO
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196

16:03:51 **1** methods.

16:03:51 **2** Q. Okay. ISO 10312 is a method for detecting

16:03:57 **3** asbestos in ambient air; correct?

16:03:58 **4** A. Correct.

16:03:59 **5** Q. Have you ever conducted air testing

16:04:02 **6** pursuant to the ISO 10312 method?

16:04:08 **7** A. In the past, yes.

16:04:10 **8** Q. Okay. How many times?

16:04:14 **9** A. I don't know.

16:04:15 **10** Q. Over ten?

16:04:16 **11** A. I don't know.

16:04:16 **12** Q. Over one?

16:04:18 **13** A. Most likely over one, but how big the

16:04:23 **14** bread box is, I don't know.

16:04:25 **15** Q. Okay. Did you test anything under the

16:04:30 **16** ISO 10312 method for this case, the MDL?

16:04:36 **17** A. Well, if you look at our report, we have

16:04:38 **18** referenced a number of TEM methods for the counting

16:04:40 **19** rules, including the two ISO methods, the ASTM

16:04:46 **20** method, the AHERA method. They all have the same

16:04:48 **21** counting rules for the determination of a regulated

16:04:51 **22** asbestos fiber. The ISO methods are referred back to

16:04:56 **23** in both the 22262-1 and -2 as the counting criteria

16:05:01 **24** for fibers and bundles.

16:05:03 **25** Q. Did you do an ISO 10312 ambient air test
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16:05:07 **1** for the purposes of this MDL?
 16:05:09 **2** **A.** No.
 16:05:09 **3** **Q.** And this ISO method involves collecting
 16:05:14 **4** air samples and testing for fibers; correct?
 16:05:17 **5** **A.** Correct.
 16:05:17 **6** **Q.** And you're not testing ambient air fibers
 16:05:19 **7** in this case, in this expert report?
 16:05:22 **8** **A.** No, we're not testing ambient air. But
 16:05:25 **9** you have to understand once the asbestos gets on the
 16:05:27 **10** filter, the -- and I know it sounds silly, but the
 16:05:32 **11** asbestos fibers don't know if it came out of ambient
 16:05:34 **12** air, if it came out of a water sample, came out of a
 16:05:37 **13** dust sample, or it came out of a bulk sample like
 16:05:40 **14** cosmetic talc. What's most important is the counting
 16:05:43 **15** rules that are the same for all these different
 16:05:47 **16** methods, as in the ISO 22262-2 for the TEM analysis
 16:05:52 **17** of talc.
 16:05:53 **18** **Q.** You did not conduct an exposure assessment
 16:05:55 **19** for this case, did you?
 16:05:56 **20** **A.** I haven't conducted an exposure assessment
 16:06:01 **21** with any MDL samples.
 16:06:04 **22** **Q.** You did employ ISO 22262; correct?
 16:06:08 **23** **A.** Yes.
 16:06:08 **24** **Q.** That does not include a formula for
 16:06:12 **25** reporting of data as structures per gram; correct?
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198

16:06:15 **1** **A.** That's correct.
 16:06:15 **2** **Q.** The --
 16:06:18 **3** **A.** Well, that's not quite true. If you go to
 16:06:20 **4** the ISO TEM method that it references, it shows you
 16:06:25 **5** how to report it in fibers or bundles per gram. So
 16:06:30 **6** again, you have to look at the methodology that it
 16:06:33 **7** references.
 16:06:34 **8** **Q.** Okay. So let me -- which ISO, 1, 2, 3 --
 16:06:39 **9** can you tell me -- are you referring to?
 16:06:40 **10** **A.** It's the 137 --
 16:06:43 **11** **Q.** ISO -- so it's part 1; correct?
 16:06:47 **12** **A.** Well, it's in both. It's in part 1 and
 16:06:50 **13** part 2.
 16:06:50 **14** **Q.** Okay. So can you point to me in part 2
 16:06:54 **15** where -- and that's Exhibit 3 -- where it says --
 16:06:57 **16** that proper reporting is done in structures per gram?
 16:07:02 **17** **A.** Did you mark that as an exhibit?
 16:07:08 **18** **Q.** Exhibit 3, yeah. It's going to be down
 16:07:11 **19** from the beginning.
 16:07:13 **20** **A.** It's 1. Give me a second. I will in a
 16:07:27 **21** second. I'm sure it's in this pile.
22 MR. CIRSCH: It might be there.
 16:07:36 **23** THE WITNESS: There it is.
 16:07:40 **24** **Q.** (By Mr. Chachkes) It should be Exhibit 3.
 16:07:41 **25** Okay.

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16:07:44 **1** **A.** So if you go to 16 --
 16:07:51 **2** MR. CIRSCH: You're calling it Exhibit 3,
 16:07:53 **3** but it says on here Exhibit 5. I just want to
 16:07:56 **4** make sure that --
 16:07:57 **5** MR. CHACHKES: So Exhibit 3 should be
 16:08:01 **6** ISO-2?
 16:08:02 **7** MR. CIRSCH: It's got Exhibit 5 on it.
 16:08:03 **8** **Q.** (By Mr. Chachkes) I'm sorry, I'm reading
 16:08:05 **9** my number wrong -- strike that. My 3 looked like --
 16:08:09 **10** totally my fault.
 16:08:10 **11** All right. Before you is Exhibit 5, which
 16:08:14 **12** is part 2 of the ISO 22262 standard. Can you point
 16:08:17 **13** to me where it requires reporting in structures per
 16:08:22 **14** gram?
 16:08:24 **15** **A.** If you go to 16.3, last paragraph before
 16:08:33 **16** you get to 17, it says, If it is required to include
 16:08:37 **17** all fiber sizes in the measurement, determination of
 16:08:40 **18** mass fraction by TEM using 14.2.4 is the optimum
 16:08:46 **19** analytical procedure.
 16:08:47 **20** If you go to 14.2.4 -- 14.2.4.4,
 16:09:12 **21** Preparation of specimens for SEM or TEM observation,
 16:09:17 **22** then it references back to the ISO 13794.
 16:09:22 **23** **Q.** Okay. So you -- it's your understanding
 16:09:25 **24** that the ISO 22262 -- so first of all, the ISO 22262
 16:09:31 **25** -2, putting aside cross-references, itself doesn't
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200

16:09:36 **1** have a formula for reporting data as structures per
 16:09:39 **2** gram; correct?
 16:09:40 **3** **A.** That is correct.
4 **Q.** Okay.
 16:09:41 **5** **A.** And it doesn't have the formula for
 16:09:43 **6** calculating weight percent. It points you back to
 16:09:48 **7** the ISO TEM protocols.
 16:09:51 **8** **Q.** Okay. And then the reference to 14.2.4,
 16:09:55 **9** that section is entitled, Determination of asbestos
 16:10:00 **10** weight mass fraction from fiber measurement made by
 16:10:03 **11** PLM, SEM, or TEM.
 16:10:04 **12** That's the title; right?
 16:10:06 **13** **A.** Correct.
 16:10:06 **14** **Q.** Okay. I just want to do a little walk
 16:10:11 **15** through one of the calculations you made so I can
 16:10:13 **16** figure it out.
 16:10:14 **17** Can I have the exhibits? Mark this as
18 Exhibit 19.
19 (Defendants' Exhibit 19 was marked for
 16:10:17 **20** identification.)
 16:10:48 **21** **Q.** (By Mr. Chachkes) Okay. Can you tell me
 16:10:51 **22** just on a high level what this spreadsheet,
 16:10:52 **23** Exhibit 19, is meant to represent?
 16:10:53 **24** **A.** This represents the weight of the sample
 16:10:54 **25** that was used, it represents the weight of the sample

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16:10:59 **1** analyzed per grid opening, it tells you what the
 16:11:04 **2** filter size was, it tells you how many regulated
 16:11:06 **3** asbestos structures, and then it gives you the
 16:11:08 **4** calculation of how many asbestos structures per gram,
 16:11:15 **5** which if you're doing weight percent, you have to do
 16:11:18 **6** all the same -- get all the same information, but
 16:11:22 **7** instead of stopping at the number of structures per
 16:11:26 **8** gram, then you go through the calculation to
 16:11:29 **9** determine the weight of each of the structures and
 16:11:33 **10** then calculate a mass weight percent.
 16:11:35 **11** **Q.** Okay. So in Exhibit 19, I guess, on the
 16:11:40 **12** upper left I see a .03135. That's the initial weight
 16:11:46 **13** prior to concentration method, or is that after
 16:11:51 **14** concentration?
 16:11:52 **15** **A.** That is the weight prior to the
 16:11:54 **16** concentration method.
 16:11:55 **17** **Q.** Okay. So that's basically the
 16:12:00 **18** unconcentrated weight that you are trying to
 16:12:02 **19** determine how many structures are in there?
 16:12:05 **20** **A.** Correct.
 16:12:07 **21** **Q.** And you use a Sartorius scale; right?
 16:12:14 **22** **A.** That's correct.
 16:12:14 **23** **Q.** Does it have that many significant digits?
 16:12:16 **24** **A.** It does.
 16:12:17 **25** **Q.** Okay. Does it have more than that, or is
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202

16:12:19 **1** that it?
 16:12:20 **2** **A.** Let's see. One, two, three, four, five.
 16:12:24 **3** I think it has six.
 16:12:26 **4** **Q.** Okay. But you only report five
 16:12:29 **5** significant digits; correct?
 16:12:31 **6** **A.** Correct.
 16:12:31 **7** **Q.** And then your analysts conduct heavy
 16:12:38 **8** liquid density separation; right?
 16:12:40 **9** **A.** Correct.
 16:12:40 **10** **Q.** After separation you have basically an
 16:12:42 **11** amphibole sludge and with much of the talc removed?
 16:12:48 **12** **A.** Correct.
 16:12:48 **13** **Q.** And what is the percentage of talc from
 16:12:53 **14** amphibole separation your analysts achieve in this
 16:12:56 **15** analysis?
 16:12:57 **16** **A.** We haven't measured that.
 16:12:58 **17** **Q.** Do you have the data and just didn't put
 16:13:04 **18** it on the sheet, or you just -- you don't even have
 16:13:05 **19** the data?
 16:13:05 **20** **A.** We don't measure the amount that we
 16:13:07 **21** removed.
 16:13:08 **22** **Q.** Okay. Is there a way to calculate it?
 16:13:12 **23** **MR. CIRSCH:** Object to form.
 16:13:13 **24** **THE WITNESS:** Not without making the
 16:13:15 **25** measurement, no.
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16:13:15 **1** **Q.** (By Mr. Chachkes) If you're analyzing two
 16:13:17 **2** samples and sample A contains more amphiboles than
 16:13:21 **3** sample B, would you expect that following the
 16:13:25 **4** concentration there would be more products separated
 16:13:27 **5** out from A than B?
 16:13:29 **6** **A.** I don't know if you can measure that. If
 16:13:32 **7** it contains more amphibole fibers in the final
 16:13:37 **8** supernate, then you would have more fibers that you
 16:13:41 **9** counted.
 16:13:42 **10** **Q.** And by supernate, that's kind of a synonym
 16:13:47 **11** for amphibole sludge --
 16:13:49 **12** **A.** Well, it's the pellet. Whatever has gone
 16:13:52 **13** down to the bottom of the centrifuge tube, any
 16:13:56 **14** potential amphiboles, some talc particles, you always
 16:14:00 **15** see talc particles, so it's not 100 percent
 16:14:03 **16** efficient.
 16:14:03 **17** **Q.** The supernate's the solids that are left
 16:14:06 **18** over after the concentration?
 16:14:07 **19** **A.** Correct.
 16:14:08 **20** **Q.** So you can't say that if one sample has
 16:14:10 **21** more amphiboles than another that there will be more
 16:14:13 **22** supernate in the former than the latter?
 16:14:17 **23** **A.** You would expect -- if it has more in
 16:14:19 **24** there you would expect more, but it's pretty tough to
 16:14:22 **25** make that determination before you measure it.
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204

16:14:24 **1** **Q.** Yeah, I'm not asking you for a
 16:14:26 **2** calculation. I'm just saying just seems like common
 16:14:29 **3** sense if you've got more to concentrate out, you'll
 16:14:33 **4** get more concentrate.
 16:14:34 **5** **MR. CIRSCH:** Object to form.
 16:14:35 **6** **THE WITNESS:** All things being equal,
 16:14:37 **7** that's correct.
 16:14:38 **8** **Q.** (By Mr. Chachkes) Okay. After separation
 16:14:38 **9** you did not weigh the centrifuge that remained -- you
 16:14:42 **10** did not weigh the supernate that remained after
 16:14:48 **11** desiccation; correct?
 16:14:49 **12** **A.** That's correct.
 16:14:50 **13** **Q.** And I see a number, weight of sample
 16:14:56 **14** analyzed; do you see that there?
 16:14:58 **15** **A.** Correct.
 16:14:58 **16** **Q.** That's more significant digits than in the
 16:15:02 **17** initial weight; correct?
 16:15:06 **18** **A.** That's correct. You take the amount that
 16:15:07 **19** has theoretically gone down onto the filter, what you
 16:15:12 **20** start with, so that if you have 31.35, then you
 16:15:18 **21** calculate what's on the overall filter, and then you
 16:15:20 **22** calculate how many grid openings you look at, then
 16:15:23 **23** it's just the math.
 16:15:24 **24** **Q.** Yeah, now my question is just about
 16:15:25 **25** significant digits. You understand why significant
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16:15:28 **1** digits are important; right?

16:15:29 **2** **A.** Yeah, but that's a mathematical

16:15:33 **3** determination of significant digits.

16:15:34 **4** **Q.** Right. Significant digits are important

16:15:37 **5** because if I have a number with three significant

16:15:40 **6** digits multiplied times a number with four

16:15:45 **7** significant digits, the result should be reflecting

16:15:51 **8** the least number of significant digits that went into

16:15:53 **9** the equation; correct?

16:15:55 **10** **MR. CIRSCH:** Object to form.

16:15:56 **11** **THE WITNESS:** You can do it that way if

16:15:57 **12** you like, or you can put it out to the

16:15:59 **13** significant digits and then round it.

16:16:01 **14** **Q.** (By Mr. Chachkes) Okay. Shouldn't you

16:16:04 **15** have rounded the weight of the sample analyzed

16:16:06 **16** because you've got more significant digits -- you've

16:16:08 **17** got more digits than there are significant digits?

16:16:10 **18** **A.** No. It's a mathematical -- it's a

16:16:13 **19** mathematical equation or just simply dividing it on

16:16:18 **20** how much of the original sample would cover the

16:16:21 **21** filter.

16:16:22 **22** **Q.** Okay. You've got a -- I'm going to phrase

16:16:25 **23** this a different way.

16:16:26 **24** You've got a greater precision in your

16:16:29 **25** weight of sample analyzed than you do with the
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206

16:16:31 **1** precision of the numbers that went into it?

16:16:35 **2** **MR. CIRSCH:** Object to form.

16:16:36 **3** **THE WITNESS:** I don't think it's any more

16:16:38 **4** precision. It's taking the weight and dividing

16:16:40 **5** it onto the filter, and then from the filter

16:16:43 **6** you're looking at a number of area by 100 grid

16:16:45 **7** openings, so you're calculating what the weight

16:16:48 **8** would be if you put the whole -- to go back to

16:16:52 **9** the sample to determine the amount of fibers.

16:16:55 **10** That's just the way it's done.

16:16:56 **11** **Q.** (By Mr. Chachkes) Does your Sartorius

16:16:59 **12** scale have the capability of measuring a sample down

16:17:01 **13** to .00017187 grams?

16:17:05 **14** **A.** Not the Sartorius, but we do have a

16:17:08 **15** microbalance, but that's not how this is done.

16:17:11 **16** **Q.** So the -- this is just a yes or no. The

16:17:18 **17** weight of sample analyzed is a number that is a

16:17:24 **18** calculation; right?

16:17:26 **19** **MR. CIRSCH:** Object to form.

16:17:26 **20** **THE WITNESS:** Yes.

16:17:28 **21** **Q.** (By Mr. Chachkes) Okay. And the

16:17:29 **22** structures per gram of sample, that's also a number

16:17:31 **23** that's calculated; right?

16:17:34 **24** **A.** That's correct.

16:17:34 **25** **Q.** And what's the equation to get me the
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16:17:42 **1** weight of sample analyzed?

16:17:44 **2** **A.** Well, you go back to the individual

16:17:46 **3** structures and you multiply the length by the width

16:17:52 **4** squared times the density of the particular type of

16:17:56 **5** amphibole times pi. And then all those are added up,

16:17:59 **6** and then you then go from the adding that up to what

16:18:03 **7** the overall weight would be on the filter.

16:18:05 **8** **Q.** Okay. And the weight of sample analyzed

16:18:10 **9** is for one grid opening, ten grid openings, 100 grid

16:18:16 **10** openings? What is it?

16:18:17 **11** **A.** That's, as I believe, that's one grid

16:18:19 **12** opening.

16:18:19 **13** **Q.** Okay. So if you wanted to extrapolate,

16:18:25 **14** putting aside --

16:18:26 **15** **A.** I may be wrong on that. I have to check

16:18:29 **16** that. I think it's all 100.

16:18:30 **17** **Q.** Okay, if that's all 100. Now, that's what

16:18:37 **18** percentage of the total supernate?

16:18:38 **19** **A.** We haven't measured the total supernate.

16:18:41 **20** We measure what we start with because the

16:18:43 **21** calculations go back to what you start with. We

16:18:46 **22** don't measure the supernate.

16:18:48 **23** **Q.** What percentage of what you started with

16:18:50 **24** is it?

16:18:51 **25** **A.** We started with 31 milligrams, and that is
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208

16:19:03 **1** 0.17. Well, we started with 0.3135 grams, and that

16:19:10 **2** is .00017187 grams. So just divide the two.

16:19:15 **3** **Q.** So is there any need to extrapolate here,

16:19:22 **4** or is 100 percent of the supernate being looked at?

16:19:26 **5** **A.** You're putting 100 percent of the

16:19:31 **6** supernate down onto the filter.

16:19:32 **7** **Q.** And that's 100 grid openings?

16:19:34 **8** **A.** Well, the filter is 201 millimeters

16:19:38 **9** squared. That's the filter where the material is put

16:19:41 **10** through the filter to collect it.

16:19:43 **11** And then you're looking at 100 grid

16:19:45 **12** openings. So 100 grid openings is 1.1 millimeter.

16:19:50 **13** So 1.1 millimeter of the 201 millimeters will now

16:19:54 **14** give you the percentage of what you're looking at on

16:19:56 **15** that filter.

16:19:57 **16** **Q.** Why are you calculating that percentage?

16:20:02 **17** Isn't 100 percent of what comes through the filter in

16:20:05 **18** the grid openings -- in the 100 grid openings?

16:20:07 **19** **MR. CIRSCH:** Object to form.

16:20:08 **20** **THE WITNESS:** No.

16:20:08 **21** **Q.** (By Mr. Chachkes) Okay.

16:20:09 **22** **A.** Can I draw on something?

16:20:11 **23** **Q.** Yeah.

16:20:13 **24** **A.** The filter is much bigger than 100 grid

16:20:15 **25** openings.
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16:20:16 **1** Q. Let me just -- here --

16:20:18 **2** MR. CIRSCH: Here you go.

16:20:22 **3** MR. CHACHKES: That would be great. Thank

16:20:22 **4** you.

16:20:22 **5** THE WITNESS: So if you have a filter

16:20:23 **6** that's this big -- that's not bad -- and then

16:20:27 **7** your grids are 3 millimeters. So -- shall I

16:20:34 **8** make a happy face here?

16:20:36 **9** Q. (By Mr. Chachkes) Please don't.

16:20:37 **10** A. So each one of these grid openings -- and

16:20:46 **11** I'm blowing it up.

16:20:50 **12** So you're taking 7 millimeter plugs and

16:20:53 **13** then each grid opening has 100 grids that are 100 by

16:20:57 **14** 100 microns, typically. So the material is going on

16:21:01 **15** this whole filter, and then you're just taking

16:21:04 **16** sections of the filter out for your TEM grids.

16:21:07 **17** MR. CHACHKES: I see.

16:21:08 **18** So can we just mark this as an exhibit,

16:21:12 **19** Exhibit 20, please.

16:21:13 **20** (Defendants' Exhibit 20 was marked for

21 identification.)

16:21:19 **22** THE WITNESS: I didn't know you were going

16:21:21 **23** to mark it.

16:21:21 **24** Q. (By Mr. Chachkes) You did know I was

16:21:23 **25** going to mark it.

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16:22:17 **1** is approximately 3 millimeters in diameter. Now, on

16:22:23 **2** this grid are openings.

3 Q. Okay.

16:22:24 **4** A. And each one of these openings looks like

16:22:35 **5** this, and they are 100 micrometers in width in two

16:22:47 **6** directions. So when you look at a grid opening,

16:22:49 **7** you're looking in this area.

16:22:51 **8** Q. Okay. And I apologize for repeating it a

16:22:56 **9** little bit, but the -- just want to make sure the

16:22:59 **10** transcript's clear to correspond with the picture.

16:23:02 **11** You've got drawn, it looks like a circle

16:23:06 **12** with three black dots, that's the filter, and in the

16:23:09 **13** filter there are -- those black dots are grids;

16:23:12 **14** correct? So far correct?

16:23:13 **15** A. So far correct.

16:23:14 **16** Q. Okay. And how many grids -- I know your

16:23:17 **17** picture only has three, but how many grids are

16:23:20 **18** actually in your filter in the lab?

16:23:22 **19** A. We make three grids.

16:23:24 **20** Q. Oh, so there are three grids?

16:23:26 **21** A. Correct.

16:23:27 **22** Q. And then you've drawn a couple arrows to

16:23:29 **23** emphasize what the grid is, and the grid has got

16:23:32 **24** basically a bunch of grid openings and that's 100

16:23:34 **25** grid openings?

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210

1 A. That's true.

16:21:24 **2** Q. So what you've drawn in Exhibit 20 -- so I

16:21:26 **3** just want to get my vocabulary correct -- that the

16:21:31 **4** filter size is the big white circle in which you've

16:21:33 **5** got the three dots, that's the -- thank you for

16:21:35 **6** marking that.

16:21:35 **7** A. Filter, which is 201 millimeters squared.

16:21:41 **8** Q. Got it.

16:21:42 **9** A. And that's the filtration area so you're

16:21:46 **10** always -- because it's in a device that holds it,

16:21:49 **11** it's not the whole size of the filter, but it's

16:21:52 **12** actually the area where filtrate is going down

16:21:55 **13** through it.

16:21:56 **14** Q. Right. Okay.

16:21:56 **15** MR. CIRSCH: You're pulling those numbers

16:21:57 **16** from Exhibit 19; correct?

16:21:59 **17** THE WITNESS: Yes. It's the same size for

16:22:00 **18** every one.

16:22:01 **19** MR. CHACHKES: And if you would not

16:22:03 **20** comment.

16:22:04 **21** Q. (By Mr. Chachkes) And the black dots that

16:22:05 **22** you have there, those are the grid openings?

16:22:08 **23** A. Those are the grids.

16:22:09 **24** Q. Okay.

16:22:09 **25** A. So a grid -- and this has been blown up --

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212

16:23:35 **1** A. Correct.

16:23:36 **2** Q. Okay. And each grid opening is, you said,

16:23:39 **3** 10 micrometers?

16:23:40 **4** A. 100 micrometers.

16:23:41 **5** Q. 100 micrometers. Got it.

16:23:43 **6** A. 100 micrometers, essentially a square, 100

16:23:49 **7** micrometers for each XY dimension.

16:23:51 **8** Q. Okay. And when you extrapolate filters --

16:23:59 **9** if the fibers you find in the filters back to the

16:24:03 **10** original weight of the sample, can you just walk me

16:24:06 **11** through that in conceptual terms?

16:24:08 **12** A. In conceptual terms, you know the area

16:24:12 **13** you've analyzed by the grid openings. You know the

16:24:15 **14** area of your filter, and you take the -- you

16:24:20 **15** determine the ratio of the amount of material on the

16:24:25 **16** filter and then go to the amount of material that

16:24:28 **17** would be on each grid opening, and then you take the

16:24:32 **18** number of fibers you have and then you

16:24:36 **19** back-calculate.

16:24:36 **20** So if I have three fibers in a known

16:24:39 **21** amount, and that amount is some percentage of the

16:24:43 **22** overall amount that I know that in the overall amount

16:24:46 **23** on the filter, this is how many fibers and bundles

16:24:52 **24** would be there because you have to assume a

16:24:56 **25** homogenous distribution on the filter.

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16:24:58 **1** Q. And do you look at the -- for your fiber
 16:25:05 **2** count, do you look at each of the three grids?
 16:25:08 **3** A. We keep one for archive; we look at two
 16:25:11 **4** grids and 50 openings on each grid.
 16:25:13 **5** Q. Okay. And why only 50 openings on each
 16:25:18 **6** grid?
 16:25:18 **7** A. Well, typically the standard protocols,
 16:25:23 **8** the peer-reviewed protocols, usually state two grid
 16:25:28 **9** openings -- two grids, and so we put 50 on one and 50
 16:25:33 **10** on the other.
 16:25:34 **11** Q. Why not 100 on one and 100 on the other?
 16:25:37 **12** A. Well, that would take twice as much time.
 16:25:40 **13** And you could do that, or you could look at 300. It
 16:25:45 **14** doesn't change anything other than reduce your --
 16:25:48 **15** increase your analytical sensitivity.
 16:25:50 **16** Q. Okay. Does the ISO 22262-2 lay out this
 16:26:00 **17** math for extrapolating from looking at a grid?
 16:26:05 **18** A. No. It referenced the protocols. All TEM
 16:26:11 **19** analyses -- air sample, water sample, bulk sample --
 16:26:15 **20** is done in this manner. All analytical chemistry is
 16:26:19 **21** done in this manner.
 16:26:20 **22** If you take a gallon of water out of Lake
 16:26:24 **23** Michigan and you want to determine the amount of lead
 16:26:26 **24** in there, for example, hypothetical, you don't
 16:26:28 **25** measure the whole gallon, you measure, typically, a
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214

16:26:32 **1** couple of milliliters of the material and then you
 16:26:34 **2** extrapolate back on the overall concentration that
 16:26:37 **3** would be there.
 16:26:38 **4** The ISO TEM air sample method is the same
 16:26:40 **5** way. You're analyzing it and you find 4 or 5 fibers
 16:26:46 **6** in the grid opening, you're extrapolating back to
 16:26:49 **7** what is in the air samples.
 16:26:51 **8** Q. Okay. Now, when you said the
 16:26:57 **9** peer-reviewed literature suggests looking at two of
 16:27:00 **10** the grids, can you give me an example of some such
 16:27:05 **11** literature?
 16:27:05 **12** A. Well, there's lots of peer-reviewed
 16:27:07 **13** literature that used the standard protocols. If you
 16:27:09 **14** look at the AHERA, you look at ISO, you look at the
 16:27:12 **15** NIOSH 7402, you look at the PCM, anything that has to
 16:27:18 **16** do with TEM, you have two grid openings. The 7402
 16:27:23 **17** says 40 openings among two grids.
 16:27:28 **18** If you have a high number of fibers, then
 16:27:31 **19** you may stop on your second opening on one grid and
 16:27:34 **20** then go to the second grid. So the protocols
 16:27:38 **21** themselves state that.
 16:27:39 **22** Q. Okay. Your analysts employed ISO 22262-2
 16:27:44 **23** to test for asbestos by TEM; is that correct?
 16:27:46 **24** A. Yes.
 16:27:47 **25** Q. And they use TEM to identify the particles
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16:27:55 **1** morphologically as asbestos; is that correct?
 16:27:58 **2** MR. CIRSCH: Object to form.
 16:27:59 **3** THE WITNESS: They use TEM to identify
 16:28:01 **4** regulated asbestos using morphology, EDXA and
 16:28:08 **5** SAED.
 16:28:09 **6** Q. (By Mr. Chachkes) Okay. So is there a
 16:28:10 **7** phrase that I can use that's not confusing to refer
 16:28:12 **8** to the visual aspect of TEM that's not, you know,
 16:28:16 **9** SAED or the other more different techniques?
 16:28:19 **10** A. Well, if you say all the counting rules
 16:28:21 **11** for all the standard TEM methods that is not the
 16:28:26 **12** occupational exposure counting rules, they will all
 16:28:30 **13** state the same thing.
 16:28:31 **14** Q. No, I'm just looking for a -- I want to
 16:28:33 **15** make sure we're speaking a common language, the
 16:28:36 **16** visual --
 16:28:37 **17** A. How about just counting rules?
 16:28:38 **18** Q. Well, we disagree as to what the counting
 16:28:40 **19** rules require.
 16:28:41 **20** So if I say the visual aspect of TEM as
 16:28:46 **21** opposed to the SAED and -- what do you call it when
 16:28:57 **22** you take a picture with the TEM?
 16:28:59 **23** MR. CIRSCH: Object to form.
 16:29:00 **24** THE WITNESS: Photomicrograph.
 16:29:01 **25** Q. (By Mr. Chachkes) Okay. So they use
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216

16:29:02 **1** photomicrographs to determine -- from the TEM to
 16:29:05 **2** determine morphology?
 16:29:06 **3** A. No. They use the counting rules to
 16:29:08 **4** determine morphology, that it has parallel sides,
 16:29:12 **5** it's greater than .5 micrometers in length, it has at
 16:29:15 **6** least a 5-to-1 aspect ratio, and the chemistry in
 16:29:20 **7** SAED determines it to be a regulated asbestos, then
 16:29:23 **8** it's a regulated asbestos fiber.
 16:29:25 **9** Q. I didn't ask what you look at to determine
 16:29:28 **10** whether it's asbestos or not.
 16:29:29 **11** What do you -- what physically are you
 16:29:33 **12** looking at to determine morphology? It's the
 16:29:35 **13** photomicrograph; right?
 16:29:37 **14** MR. CIRSCH: Object to form.
 16:29:37 **15** THE WITNESS: No. We're visually looking
 16:29:40 **16** through the microscope. And I'll use an
 16:29:42 **17** example. I'm looking at a magnification of
 16:29:46 **18** approximately 20,000 times, and in my field of
 16:29:49 **19** view a structure looking like this pen shows up.
 16:29:55 **20** The first thing I do is look at it and say
 16:29:57 **21** does it have parallel sides? The answer is yes.
 16:30:00 **22** We have calibration standards and go is it
 16:30:03 **23** greater than .5 micrometers in length? Yes.
 16:30:08 **24** Does it have an aspect ratio of greater than
 16:30:11 **25** 5-to-1? I can visually see that, but we take a
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16:30:14 **1** photomicrograph -- it's close -- to make sure.
 16:30:16 **2 Q.** (By Mr. Chachkes) So you use visual
 16:30:18 **3** inspection through the TEM to determine morphology?
 16:30:22 **4 MR.** CIRSCH: Object to form.
 16:30:23 **5 THE WITNESS:** With the counting rules,
 16:30:26 **6** that is correct.
 16:30:27 **7 Q.** (By Mr. Chachkes) Okay. Well, it doesn't
 16:30:29 **8** matter what the counting rules are. If you want to
 16:30:32 **9** look at -- if you want to just see the morphology,
 16:30:34 **10** you use visual inspection?
 16:30:36 **11 MR.** CIRSCH: Object to form.
 16:30:36 **12 THE WITNESS:** The first thing we do is
 16:30:38 **13** look at it and if it has parallel sides and does
 16:30:42 **14** it meet the counting rules where this is an
 16:30:47 **15** elongated particle, that deserves further
 16:30:51 **16** examination.
 16:30:51 **17 Q.** (By Mr. Chachkes) Can you tell me where
 16:30:53 **18** in ISO 22262 it provides -- directs you to look at
 16:31:01 **19** morphology under TEM?
 16:31:03 **20 A.** I did. I gave you the ISO standard for
 16:31:06 **21** TEM and indirect prep, and in order to determine what
 16:31:11 **22** your weight percent is, you have to determine if it
 16:31:14 **23** is parallel sides, greater than .5 micrometers in
 16:31:17 **24** length, and so on and so forth.
 16:31:19 **25** Not all methods replicate previous
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218

16:31:22 **1** methods. ISO 22262-2 does not put the entire
 16:31:28 **2** counting protocol in there. It directs you to the
 16:31:30 **3** TEM method where you have all these methodology to do
 16:31:36 **4** that.
 16:31:36 **5 Q.** Okay. So it's not, per se, in 22262, but
 16:31:40 **6** you're saying there's a reference to another ISO
 16:31:44 **7** standard which you say requires visual inspection
 16:31:49 **8** under TEM to determine morphology?
 16:31:52 **9 MR.** CIRSCH: Object to form.
 16:31:53 **10 THE WITNESS:** Well, per se it doesn't
 16:31:55 **11** replicate the entire procedure. That's how
 16:31:57 **12** these standards work.
 16:31:59 **13** Once it has a document, in this case,
 16:32:03 **14** another ISO document that lays out all the
 16:32:06 **15** procedures and practices for how to identify
 16:32:09 **16** regulated asbestos, it just goes back to that.
 16:32:13 **17 Q.** (By Mr. Chachkes) So --
 16:32:14 **18 A.** ASTM is the same way, and the definition
 16:32:17 **19** of asbestos fibers in ASTM has another document that
 16:32:20 **20** tells you all the different definitions. One builds
 16:32:25 **21** on the other.
 16:32:26 **22 Q.** Okay. Just looking at 22262, there is a
 16:32:28 **23** section in there under part 1 that is labeled
 16:32:33 **24** Morphology; right?
 16:32:47 **25** Exhibit 4 is the one that's part 1?
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16:32:49 **1 A.** Oh, part 1, I'm sorry.
 16:32:51 **2 Q.** Yeah. I'll just direct your attention to
 16:33:05 **3** 7.2. -- on page 22.
 16:33:22 **4** So there's a section on page 22 which has
 16:33:26 **5** the heading Morphology; correct?
 16:33:28 **6 A.** That is correct. 7.2.3.7.1. I'm
 16:33:32 **7** surprised you didn't know that.
 16:33:34 **8 Q.** I did, actually.
 16:33:36 **9** And the only heading, as far as you know,
 16:33:41 **10** in the ISO 22262 parts that actually says morphology
 16:33:47 **11** is this one? Or do you not know? I don't want to
 16:33:51 **12** spend all day on that one.
 16:33:52 **13 MR.** CIRSCH: Form.
 16:33:53 **14 THE WITNESS:** Well, this is a PLM
 16:33:54 **15** analysis. This is not TEM analysis. And ISO
 16:33:56 **16** has their PLM analysis setup, and these are the
 16:34:01 **17** counting rules of what you do when you're
 16:34:03 **18** analyzing under a polarized light microscope
 16:34:05 **19** versus a transmission electron microscope.
 16:34:07 **20 Q.** (By Mr. Chachkes) Did you use PLM to
 16:34:12 **21** identify the morphology of the fibers you found in
 16:34:15 **22** the MDL?
 16:34:16 **23 MR.** CIRSCH: Object to form.
 16:34:19 **24 THE WITNESS:** Well, that's worded -- and I
 16:34:20 **25** apologize. That's worded poorly.
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220

16:34:22 **1** For our ISO 22262-1 PLM analysis, yes. We
 16:34:28 **2** went through, and each of these regulated
 16:34:32 **3** asbestos fibers that we have in there in
 16:34:34 **4** pictures follow this morphology.
 16:34:37 **5 Q.** (By Mr. Chachkes) Okay. In your reports
 16:34:43 **6** you write on page 12, Amphibole fibers or bundles
 16:34:49 **7** with substantially parallel sides and an aspect ratio
 16:34:53 **8** of 5-to-1 or greater and at least half a micrometer
 16:34:56 **9** in length were counted as regulated asbestos fibers
 16:35:00 **10** and bundles per the standard TEM counting rules
 16:35:03 **11** described by -- and then you cite six methods. Are
 16:35:07 **12** you with me so far?
 16:35:08 **13 A.** I am.
 16:35:08 **14 Q.** Which is the method you actually use?
 16:35:12 **15 A.** Well, can't really point to any one method
 16:35:15 **16** because they all have the same counting rules.
 16:35:17 **17 Q.** Okay.
 16:35:27 **18 A.** What page was that?
 16:35:28 **19 Q.** I was just talking about page 12 of your
 16:35:31 **20** January 15.
 16:35:32 **21 A.** I think it states that.
 16:35:35 **22** This is for, again, TEM. And every one of
 16:35:45 **23** those TEM methods have those counting rules, so I
 16:35:48 **24** referenced them all.
 16:35:50 **25 MR.** CHACHKES: So I'm going to mark as the
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16:35:51 **1** next exhibit ISO 13794. We are on Exhibit 21.
 16:36:02 **2** (Defendants' Exhibit 21 was marked for
 16:36:25 **3** identification.)
 16:36:25 **4** **Q.** (By Mr. Chachkes) So we spoke a little
 16:36:26 **5** bit before about what's been marked as Exhibit 21;
 16:36:26 **6** right?
 16:36:31 **7** **A.** Yes, sir, we have.
 16:36:32 **8** **Q.** Okay. And going to the seventh page in
 16:36:41 **9** section 1, Scope. Section -- we're here.
 16:36:55 **10** **A.** What page? 7? Did you say 7?
 16:36:59 **11** **Q.** Actually, strike that.
 16:37:00 **12** I'm sorry. So it was the seventh page of
 16:37:05 **13** the PDF, so let's strike that and start again.
 16:37:09 **14** Going to what's numbered in the exhibit as
 16:37:11 **15** page 1, going to the heading 1, this is Scope; right?
 16:37:17 **16** It's the scope of the ISO standard?
 16:37:19 **17** **A.** Correct.
 16:37:20 **18** **Q.** Okay. Subsection 1.1, which is substance
 16:37:24 **19** determined; do you see that?
 16:37:25 **20** **A.** I do.
 16:37:26 **21** **Q.** And then you see at the last sentence, The
 16:37:30 **22** method cannot discriminate between individual fibers
 16:37:33 **23** of asbestos and nonasbestos analogs of the same
 16:37:36 **24** amphibole mineral.
 16:37:36 **25** Do you see that?
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222

16:37:37 **1** **A.** I do.
 16:37:37 **2** **Q.** Do you agree with ISO 13794 that this
 16:37:43 **3** method cannot discriminate between individual fibers
 16:37:46 **4** of the asbestos and nonasbestos analogs of the same
 16:37:50 **5** amphibole material?
 16:37:50 **6** **A.** Yes and no. If you're analyzing samples
 16:37:56 **7** over and over from the same source and you're seeing
 16:38:01 **8** both what people will clearly say is asbestiform
 16:38:08 **9** bundles and you have some individual fibers in there,
 16:38:11 **10** in my opinion you can discriminate against that.
 16:38:12 **11** If I was looking at one fiber and I didn't
 16:38:15 **12** have any information about it and hadn't analyzed
 16:38:18 **13** sample after sample, I would say that one fiber, it's
 16:38:24 **14** asbestos, it's asbestiform because it's formed like
 16:38:28 **15** asbestos, but, no, it does not meet the geological
 16:38:31 **16** definition for asbestos, high tensile strength,
 16:38:36 **17** flexible, and so on and so forth.
 16:38:39 **18** But to me, asbestiform means that it is
 16:38:42 **19** fibrous like asbestos; I would call it asbestiform.
 16:38:45 **20** **Q.** So it's your understanding when -- in this
 16:38:49 **21** exhibit, in this ISO standard, when it says it can't
 16:38:52 **22** discriminate between asbestos and nonasbestos
 16:38:54 **23** analogs, it's referring to geological definitions and
 16:39:00 **24** not regulatory definitions; is that your testimony?
 16:39:02 **25** **MR. CIRSCH:** Object to form.
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16:39:03 **1** **THE WITNESS:** Well, it is regulatory. If
 16:39:05 **2** it -- even though it cannot discriminate, you
 16:39:07 **3** have to count it, and it is a regulated asbestos
 16:39:10 **4** fiber if you decide it's asbestiform or not. It
 16:39:14 **5** does not allow you to discriminate between the
 16:39:16 **6** two as long as it meets the counting rules. It
 16:39:18 **7** is regulated.
 16:39:18 **8** **Q.** (By Mr. Chachkes) Okay.
 16:39:19 **9** **A.** Now, we can argue over back and forth if
 16:39:21 **10** it is asbestiform or not. But make no mistake, it is
 16:39:24 **11** a regulated asbestos fiber if it meets the counting
 16:39:27 **12** rules.
 16:39:28 **13** **Q.** Okay. So you're saying that something can
 16:39:31 **14** meet the counting rules, be regulated, but it might
 16:39:34 **15** be the non -- you might be counting nonasbestos
 16:39:37 **16** analogs?
 16:39:38 **17** **MR. CIRSCH:** Object to form.
 16:39:39 **18** **THE WITNESS:** It's not nonasbestos.
 16:39:42 **19** It's --
 16:39:42 **20** **Q.** (By Mr. Chachkes) I'm using the phrase
 16:39:44 **21** in --
 16:39:44 **22** **A.** It is not nonasbestos. If it meets all
 16:39:46 **23** the counting rules, it's a regulated asbestos fiber.
 16:39:49 **24** That's my position on that.
 16:39:50 **25** **Q.** Okay. In this last sentence of 1.1, it
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224

16:39:55 **1** makes a distinction between asbestos and nonasbestos
 16:39:57 **2** analogs; do you see that?
 16:39:58 **3** **A.** I see that.
 16:39:59 **4** **Q.** That's black and white; right?
 16:40:00 **5** **MR. CIRSCH:** Object.
 16:40:01 **6** **THE WITNESS:** That's what it states.
 16:40:02 **7** **Q.** (By Mr. Chachkes) Okay. So tell me what
 16:40:04 **8** asbestos versus nonasbestos analogs mean in
 16:40:09 **9** ISO 13794.
 16:40:09 **10** **MR. CIRSCH:** Object to form.
 16:40:10 **11** **THE WITNESS:** They don't really define it
 16:40:12 **12** other than to say it may not.
 16:40:13 **13** In my opinion, if it is fibrous,
 16:40:16 **14** asbestiform, fibrous like asbestos-form, it is
 16:40:20 **15** asbestiform.
 16:40:21 **16** **Q.** (By Mr. Chachkes) Yeah, but what I want
 16:40:23 **17** is can you make any -- reading -- looking at that
 16:40:27 **18** sentence, there's a clear distinction between
 16:40:30 **19** asbestos and nonasbestos analogs. What's the
 16:40:32 **20** difference?
 16:40:33 **21** It doesn't matter what you think. What is
 16:40:34 **22** the ISO -- what distinction are they making? Or you
 16:40:37 **23** just can't say?
 16:40:38 **24** **MR. CIRSCH:** Object to form.
 16:40:38 **25** **THE WITNESS:** It's not that they don't
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16:40:40 **1** say. They don't tell you how to determine
 16:40:41 **2** between, quote, this nonasbestos -- this
 16:40:44 **3** nonasbestiform versus asbestiform. There is no
 16:40:50 **4** method for doing that.
 16:40:52 **5** **Q.** (By Mr. Chachkes) Okay. Is it your
 16:40:53 **6** opinion because they don't give a definition of the
 16:40:56 **7** distinction, they really didn't mean that
 16:40:59 **8** distinction?
 16:40:59 **9** **A.** I can't say what the --
 16:41:01 **10** MR. CIRSCH: Object to form.
 16:41:02 **11** THE WITNESS: -- what Eric Chatfield had
 16:41:05 **12** in mind when he said that.
 16:41:07 **13** **Q.** (By Mr. Chachkes) Okay.
 16:41:07 **14** **A.** But in the protocol, what I look at as a
 16:41:09 **15** scientist, and we look at these protocols, what does
 16:41:13 **16** it say to make the determination between the two? It
 16:41:17 **17** doesn't give you any information. Same thing with
 16:41:19 **18** the whole asbestiform, high tensile strength,
 16:41:23 **19** et cetera.
 16:41:24 **20** But we have the ability now, we have
 16:41:26 **21** analyzed so many samples and have analyzed so many
 16:41:30 **22** regulated asbestos fibers and bundles that we have
 16:41:34 **23** enough information if that is really at issue that
 16:41:37 **24** these are all asbestiform.
 16:41:40 **25** But no matter if you want to argue that
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226

16:41:42 **1** it's not, it is, for single fibers, it's all
 16:41:45 **2** regulated asbestos fibers per these protocols.
 16:41:47 **3** **Q.** Yeah, you've already said that a number of
 16:41:49 **4** times, and I'm not going to take issue with your
 16:41:51 **5** opinion in that regard.
 16:41:52 **6** What I want to know is the phrase
 16:41:56 **7** nonasbestos analog appears in ISO 13794. What does
 16:42:00 **8** it mean? And if you have no idea, that's fine.
 16:42:03 **9** MR. CIRSCH: Object to form.
 16:42:04 **10** THE WITNESS: It's not that I don't have
 16:42:05 **11** any idea. I have an opinion about it. And it's
 16:42:08 **12** not my opinion that they're regulated asbestos
 16:42:10 **13** or not and you count them. The protocol tells
 16:42:13 **14** you to count them, that this is a regulated
 16:42:16 **15** asbestos fiber, you will record it on a count
 16:42:19 **16** sheet. All these protocols do that.
 16:42:21 **17** It doesn't give you the information to
 16:42:22 **18** make the determination. Just like it doesn't
 16:42:24 **19** give you the information to determine if you
 16:42:26 **20** have high tensile strength. It does not give
 16:42:30 **21** you the information to make the determination
 16:42:31 **22** what a population is. It does not give you the
 16:42:34 **23** information to make a determination if it's
 16:42:37 **24** flexible or not.
 16:42:37 **25** **Q.** (By Mr. Chachkes) Putting aside what gets
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16:42:39 **1** counted and what doesn't get counted, what does
 16:42:41 **2** nonasbestos analogs in this sentence mean? What does
 16:42:45 **3** that phrase mean?
 16:42:46 **4** MR. CIRSCH: Object to form. And this is
 16:42:48 **5** the last time he's going to answer this
 16:42:51 **6** question.
 16:42:51 **7** THE WITNESS: I don't know what they're
 16:42:52 **8** saying what it means because they don't give you
 16:42:54 **9** any information to make that determination.
 16:42:56 **10** I look at just simply what does
 16:42:58 **11** asbestiform mean. It means formed like
 16:43:01 **12** asbestos.
 16:43:02 **13** So you may not like my opinion, but that's
 16:43:06 **14** my opinion.
 16:43:06 **15** **Q.** (By Mr. Chachkes) You know that under 2.6
 16:43:13 **16** on page 2 it says, Asbestiform is a specific type of
 16:43:17 **17** mineral fibrosity in which fibers and fibrils possess
 16:43:21 **18** high tensile strength and flexibility.
 16:43:24 **19** You see that; right?
 16:43:25 **20** **A.** What is it? 2.6?
 16:43:27 **21** **Q.** 2.6. Do you see that?
 16:43:27 **22** **A.** Yes, I do.
 16:43:27 **23** **Q.** Would it be reasonable to conclude
 16:43:29 **24** nonasbestiform is something that is an analog to
 16:43:33 **25** something that is asbestiform under 2.6?
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228

16:43:35 **1** **A.** No.
 16:43:35 **2** MR. CIRSCH: Object to form.
 16:43:36 **3** THE WITNESS: The protocol doesn't tell
 16:43:38 **4** you what any of that means. High tensile
 16:43:41 **5** strength. What tensile strength? How do you
 16:43:45 **6** measure that?
 16:43:46 **7** That's just a general geological
 16:43:48 **8** definition for somebody who may be interested in
 16:43:51 **9** digging asbestos out of the ground, and is it
 16:43:53 **10** going to be fibrous enough to be profitable?
 16:43:56 **11** That has no meaning in the protocol.
 16:43:57 **12** Otherwise, in a protocol for how to do the
 16:44:00 **13** analysis, how do you determine it's high tensile
 16:44:03 **14** strength? What does high tensile strength mean?
 16:44:06 **15** Is it 10,000 high, is it 2,000 high has no
 16:44:11 **16** bearing on the actual analysis in the protocol.
 16:44:11 **17** **Q.** (By Mr. Chachkes) Okay.
 16:44:13 **18** **A.** This is nothing more than a standard
 16:44:16 **19** geological definition for a high fibrous mine of
 16:44:20 **20** asbestos.
 16:44:20 **21** **Q.** In your opinion, is the sentence that this
 16:44:24 **22** method -- this ISO method can't discriminate between
 16:44:28 **23** individual fibers of asbestos and nonasbestiform
 16:44:31 **24** analogs, is it related to those definitions in 2.6,
 16:44:35 **25** 2.7?
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16:44:36 **1** A. No, because those definitions aren't
16:44:39 **2** defined anywhere in the protocol for the analysis.
16:44:42 **3** Q. Okay. And so when ISO uses the word
16:44:45 **4** asbestos on page 1, it's not related to how ISO
16:44:49 **5** defines asbestos on page 2?
16:44:52 **6** MR. CIRSCH: Object to form.
16:44:53 **7** THE WITNESS: On page 2, if you go to
16:45:02 **8** page 3, they define what a fiber is.
16:45:08 **9** Is it page 3 or page 4? Give me a second.
16:45:17 **10** ISO defines a fiber -- for the purpose of
16:45:20 **11** this International Standard, a fiber is defined
16:45:23 **12** to have an aspect ratio equal or greater than
16:45:26 **13** 5-to-1 and a minimum length of 5.0.
16:45:29 **14** Fiber bundle, structure composed of
16:45:31 **15** parallel smaller diameter fibers attached to
16:45:35 **16** longer lengths.
16:45:36 **17** Fibrous structure.
16:45:38 **18** And then you go to, okay, once I've
16:45:40 **19** defined it as a fiber, in the method tells you
16:45:43 **20** to -- how to identify it if it is asbestos fiber
16:45:46 **21** or not.
16:45:48 **22** Nothing else in there tells you anything
16:45:49 **23** about how to determine tensile strength, how to
16:45:52 **24** determine flexibility, how to determine the
16:45:56 **25** pop -- this one doesn't say population, but some
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230

16:45:59 **1** do.
16:45:59 **2** Q. (By Mr. Chachkes) It's a simple -- very
16:46:01 **3** simple question. Page 1, the word asbestos is used.
16:46:04 **4** On page 2 I see a definition of asbestos. Is it your
16:46:07 **5** testimony that the two are unrelated, or are they
16:46:10 **6** related?
7 MR. CIRSCH: Object to form.
16:46:11 **8** Q. (By Mr. Chachkes) It's a yes or no. Are
16:46:13 **9** they related?
16:46:14 **10** MR. CIRSCH: Object to form.
16:46:14 **11** THE WITNESS: This is not a yes and no
16:46:16 **12** question. You have to take the whole protocol
16:46:18 **13** into consideration to answer this question.
16:46:21 **14** The whole protocol determines what is a
16:46:24 **15** regulated asbestos, and then the asbestiform and
16:46:27 **16** high tensile strength is just a general
16:46:30 **17** definition. That's what it means.
16:46:32 **18** Q. (By Mr. Chachkes) Okay. So if I want to
16:46:36 **19** figure out what nonasbestos analog means in 1.1, I
16:46:41 **20** could not use definitions like 2.6, 2.7, 2.8 to help
16:46:46 **21** me determine that?
16:46:48 **22** MR. CIRSCH: Object to form.
16:46:49 **23** THE WITNESS: Well, those definitions tell
16:46:51 **24** you what is a regulated asbestos fiber. There
16:46:55 **25** is nothing in the protocol that tells you how to
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16:46:58 **1** make the determination other than the counting
16:47:00 **2** rules.
16:47:01 **3** Certainly, if it doesn't have parallel
16:47:04 **4** sides, if it is a piece of a chunk of rock,
16:47:08 **5** yeah, that's nonasbestiform. But when it has
16:47:10 **6** the definition and meets the regulatory fiber
16:47:14 **7** definition for asbestos, it is asbestos.
16:47:17 **8** Q. (By Mr. Chachkes) Okay. But you agree
16:47:19 **9** with the sentence in -- all right. Strike that.
16:47:36 **10** You personally can distinguish between
16:47:40 **11** asbestos and nonasbestos analogs with TEM; is that
16:47:44 **12** correct?
16:47:44 **13** MR. CIRSCH: Object to form.
16:47:45 **14** THE WITNESS: Yes, I can.
16:47:49 **15** Q. (By Mr. Chachkes) Using the ISO 13794
16:47:54 **16** method; correct?
16:47:56 **17** A. Yes, I can. If it doesn't meet the
16:47:57 **18** counting rules, it doesn't have parallel sides, it
16:48:01 **19** doesn't have the aspect ratio, I don't record that as
16:48:05 **20** an asbestos -- as an asbestos -- regulated asbestos
16:48:09 **21** fiber.
16:48:11 **22** Outside those counting rules, there's
16:48:12 **23** nothing else in there. If it has parallel sides --
16:48:18 **24** and what we're arguing is a small number of fibers.
16:48:22 **25** I think in the MDL we had almost 90-something percent
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232

16:48:25 **1** bundles.
16:48:25 **2** So then we're dealing with some single
16:48:29 **3** fibers. And because we have this -- and I'll call
16:48:34 **4** it -- since a population is more than one, for these
16:48:37 **5** two mine sources we're dealing with, we have a large
16:48:40 **6** number of asbestiform bundles and a much smaller
16:48:44 **7** number of individual fibers.
16:48:45 **8** Q. Would you agree that there are two types
16:48:47 **9** of tremolite --
16:48:48 **10** MR. CIRSCH: Did you finish your answer,
16:48:49 **11** Dr. Longo?
16:48:49 **12** THE WITNESS: I think so.
16:48:50 **13** Q. (By Mr. Chachkes) Would you agree that
16:48:51 **14** there's two kinds of tremolite: asbestiform and
16:48:54 **15** nonasbestiform?
16:48:55 **16** A. I agree there's tremolite asbestos; and
16:48:57 **17** then there's tremolite asbestos, regulated tremolite
16:49:01 **18** asbestos. Then there is what we don't count as a
16:49:04 **19** regulated asbestos fiber because of various reasons.
16:49:07 **20** Q. Is there such a thing as nonasbestiform
16:49:11 **21** tremolite?
16:49:12 **22** A. There is cleavage fragment type small
16:49:16 **23** particulates of tremolite that we do not count. You
16:49:18 **24** can call it nonasbestiform; you can call it a
16:49:20 **25** cleavage fragment. But I would agree with that.
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16:49:23 **1** Anything below 5-to-1 aspect ratio we don't count.

16:49:27 **2** And you can call it whatever you like, but it's not a

16:49:30 **3** regulated asbestos fiber/bundle.

16:49:32 **4** **Q.** Okay. Do you ever -- do you feel like you

16:49:39 **5** have the ability to talk about a mineralogical --

16:49:42 **6** what you called a mineralogical definition of

16:49:44 **7** asbestos? Or is that outside of your expertise?

16:49:47 **8** **A.** You mean a geological definition?

16:49:49 **9** **Q.** Or a geological.

16:49:50 **10** **A.** Sure.

16:49:50 **11** **Q.** Okay. Geologically, what's a

16:49:52 **12** nonasbestiform asbestos?

16:49:53 **13** **A.** Rocks.

16:49:56 **14** **Q.** That's it? Everything that's rock is

16:49:59 **15** nonasbestiform asbestos?

16:50:01 **16** **MR. CIRSCH:** Object to form.

16:50:02 **17** **THE WITNESS:** If it doesn't have a fibrous

16:50:04 **18** habitat, it's nonasbestos.

16:50:07 **19** **Q.** (By Mr. Chachkes) Okay.

16:50:08 **20** **A.** Or habit -- excuse me -- not habitat. I

16:50:10 **21** think that's where animals live. I apologize.

16:50:12 **22** Strike that.

16:50:12 **23** If the crystalline habit is not fibrous,

16:50:17 **24** then it's not something that is mined or used as a

16:50:22 **25** regulated -- and it's not determined to be a

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234

16:50:24 **1** regulated asbestos.

16:50:24 **2** **Q.** All right. You remember the original

16:50:26 **3** question was not about regulations; it was about the

16:50:28 **4** geological definitions; right?

16:50:31 **5** **MR. CIRSCH:** Object to form.

16:50:32 **6** **THE WITNESS:** I believe I have enough

16:50:33 **7** expertise to discuss the geological definitions,

16:50:36 **8** to discuss this high tensile strength, to

16:50:40 **9** discuss what the value of a mine is that has

16:50:42 **10** very matted, very fibrous asbestos, like

16:50:45 **11** chrysotile, versus what a ton of the same

16:50:49 **12** asbestos where it's 7M and it's almost two

16:50:54 **13** orders of magnitude difference. It's about the

16:50:56 **14** viability of a particular asbestos mine.

16:50:58 **15** **Q.** (By Mr. Chachkes) Okay. Tremolite alone

16:51:02 **16** does not mean it's asbestos; would you agree with

16:51:04 **17** that statement --

16:51:09 **18** **MS. O'DELL:** Object to form.

19 **Q.** (By Mr. Chachkes) -- saying something's

20 tremolite?

21 **MS. O'DELL:** Object to form.

16:51:10 **22** **THE WITNESS:** It depends on what you're

16:51:11 **23** talking about. If you're talking about, say,

16:51:14 **24** XRD 20, 30, 40 years ago, said tremolite in a

16:51:20 **25** particular mine and over time that particular

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16:51:24 **1** mine has shown that the tremolite in there is

16:51:27 **2** primarily asbestiform, then, yeah, you can take

16:51:30 **3** all the data specifically and say, well, this

16:51:34 **4** whole data with XRD shows that there was

16:51:37 **5** tremolite present, but no, it doesn't -- XRD

16:51:39 **6** does not give you fibrous. But after a while,

16:51:43 **7** if you analyze enough samples out of the mine

16:51:45 **8** and you're seeing regulated asbestos fibers and

16:51:47 **9** bundles, then more likely than not those initial

16:51:51 **10** XRD analysis was asbestos.

16:51:53 **11** **Q.** (By Mr. Chachkes) Without referring to

16:51:55 **12** the -- so you understand that I can look at a tree in

16:52:00 **13** many different ways. I can look at it through a

16:52:02 **14** microscope, I can look at it through a telescope, I

16:52:05 **15** can look at it with my own eyes. So far you're with

16:52:08 **16** me?

16:52:08 **17** **A.** So far.

16:52:09 **18** **Q.** Okay. Do you understand that the way I

16:52:10 **19** look at it doesn't change the definition of whether

16:52:12 **20** it's a tree or not; right?

16:52:14 **21** **MR. CIRSCH:** Object to form.

16:52:15 **22** **Q.** (By Mr. Chachkes) Is that true or not?

16:52:16 **23** **MR. CIRSCH:** Object to form.

16:52:17 **24** **Q.** (By Mr. Chachkes) I'm only asking about

16:52:20 **25** the tree now.

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236

16:52:21 **1** **A.** I don't think you would be able to tell by

16:52:24 **2** a telescope. But if you're looking at a tree, it's a

16:52:27 **3** tree.

16:52:27 **4** **Q.** Right. It doesn't matter how I'm looking

16:52:29 **5** at it. A tree is a tree; is that correct?

16:52:32 **6** **MS. O'DELL:** Object to form.

16:52:33 **7** **THE WITNESS:** Your tree analogy for a

16:52:36 **8** tree, that's correct.

16:52:36 **9** **Q.** (By Mr. Chachkes) Okay. So are you

16:52:38 **10** saying it's different for asbestos? I call something

16:52:41 **11** asbestos or nonasbestiform depending on how I look at

16:52:44 **12** it?

16:52:44 **13** **MR. CIRSCH:** Object to form.

16:52:45 **14** **THE WITNESS:** No. It's sort of a

16:52:46 **15** misleading kind of analogy.

16:52:48 **16** What I'm talking about is back 50 years

16:52:53 **17** ago, when you're looking at a tree, you said it

16:52:56 **18** was a tree. Somebody asked later that -- people

16:52:59 **19** went in who actually knew what trees were and

16:53:02 **20** said, well, 95 percent of these are oak trees 40

16:53:05 **21** years later. Then you go, well, what was I

16:53:07 **22** actually looking at 50 years ago for these same

16:53:10 **23** trees? Well, oak trees.

16:53:11 **24** **Q.** (By Mr. Chachkes) I'm just talking

16:53:13 **25** about -- okay. Stick with me here. Don't talk about

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16:53:16 **1** history. Don't talk about the way I'm looking at
 16:53:18 **2** things. Don't talk about regulations.
 16:53:20 **3** Just strictly objectively, what is
 16:53:24 **4** nonasbestiform versus asbestiform?
 16:53:27 **5** MR. CIRSCH: Object to form.
 16:53:28 **6** **Q.** (By Mr. Chachkes) And if you can do that
 16:53:30 **7** without telling me -- without -- can you do that
 16:53:33 **8** without talking about the device I'm looking at it
 16:53:34 **9** with? Is that possible?
 16:53:37 **10** MR. CIRSCH: Object to form.
 16:53:38 **11** THE WITNESS: No --
 16:53:40 **12** **Q.** (By Mr. Chachkes) Okay. What --
 16:53:43 **13** **A.** -- because --
 16:53:43 **14** MR. CIRSCH: Let him answer.
 16:53:43 **15** THE WITNESS: What we're doing here is
 16:53:44 **16** we're using sophisticated devices to make the
 16:53:49 **17** determination if these are regulated asbestos or
 16:53:50 **18** not.
 16:53:50 **19** I understand that maybe for whatever
 16:53:52 **20** reason you want to just pick little pieces here
 16:53:55 **21** and there, but this is not what we do with this
 16:53:56 **22** analysis.
 16:53:57 **23** We're using standard peer-reviewed
 16:54:02 **24** published protocols for the determination of
 16:54:05 **25** regulated asbestos fibers and bundles.
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238

16:54:08 **1** **Q.** (By Mr. Chachkes) Tremolite -- just
 16:54:10 **2** saying something is tremolite does not mean it's
 16:54:12 **3** asbestos in certain contexts; is that true?
 16:54:15 **4** MS. O'DELL: Object to the form.
 16:54:16 **5** THE WITNESS: Again, when we do these
 16:54:18 **6** analyses, anything that doesn't meet the
 16:54:20 **7** regulated asbestos counting rules we do not
 16:54:23 **8** count. You can call it whatever you like, but
 16:54:25 **9** it doesn't meet the counting rules.
 16:54:27 **10** Everything that we have published and
 16:54:29 **11** provided here is regulated asbestos fibers and
 16:54:32 **12** bundles.
 16:54:33 **13** **Q.** (By Mr. Chachkes) Okay. What is a
 16:54:34 **14** cleavage fragment?
 16:54:35 **15** **A.** Cleavage fragment, typically for
 16:54:38 **16** tremolite, is particulates that have an aspect ratio
 16:54:41 **17** of somewhere between 1-to-1 to 1-to-2, but they will
 16:54:44 **18** have the same chemistry and the same crystalline
 16:54:47 **19** pattern.
 16:54:48 **20** **Q.** Do you agree with ISO 13794 when it
 16:54:53 **21** defines cleavage fragment as a fragment of a crystal
 16:54:57 **22** that is bounded by cleavage faces?
 16:55:00 **23** **A.** Yes.
 16:55:00 **24** **Q.** Would you agree with this statement:
 16:55:03 **25** Crushing of nonasbestiform amphiboles can -- I'm
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16:55:09 **1** sorry. Strike that. Start again.
 16:55:19 **2** Do you agree with this statement:
 16:55:21 **3** Crushing of nonasbestiform amphibole can lead to
 16:55:24 **4** elongate fragments that conform to the definition of
 16:55:27 **5** a fiber?
 16:55:30 **6** **A.** I've not seen those with these counting
 16:55:35 **7** rules. Certainly we have seen lots of these
 16:55:38 **8** fragments that are below 5-to-1 aspect ratio.
 16:55:45 **9** I'm not ruling it out, but we typically
 16:55:47 **10** don't see that. When we did a size distribution
 16:55:51 **11** of --
 16:55:52 **12** **Q.** I'm not talking about what you can't
 16:55:54 **13** see --
 16:55:55 **14** MR. CIRSCH: Hold on.
 16:55:56 **15** THE WITNESS: Hold on, hold on.
 16:55:57 **16** We don't typically see that but your
 16:55:59 **17** hypothetical, if it does have parallel sides, if
 16:56:02 **18** it does meet all the definitions of the counting
 16:56:04 **19** rules, you can call it what you like, but it's
 16:56:07 **20** regulated asbestos per the standard counting
 16:56:10 **21** rules for every one of these TEM methods that I
 16:56:13 **22** have referenced in my report.
 16:56:15 **23** **Q.** (By Mr. Chachkes) I kind of lost track
 16:56:17 **24** there.
 16:56:17 **25** Do you agree with the statement: Crushing
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240

16:56:20 **1** of asbestiform amphibole can lead to elongate
 16:56:23 **2** fragments that conform to the definition of a fiber?
 16:56:26 **3** MR. CIRSCH: Object to form.
 16:56:27 **4** THE WITNESS: I've not seen one, so maybe
 16:56:29 **5** somebody else has.
 16:56:30 **6** **Q.** (By Mr. Chachkes) Okay. Do you agree
 16:56:32 **7** with the statement: Crushed nonasbestiform
 16:56:34 **8** amphiboles rarely have aspect ratios exceeding
 16:56:37 **9** 30-to-1?
 16:56:38 **10** **A.** I've not seen crushed -- I'm sorry, would
 16:56:42 **11** you repeat that?
 16:56:43 **12** **Q.** Crushed nonasbestiform amphiboles rarely
 16:56:46 **13** have aspect ratios exceeding 30-to-1.
 16:56:49 **14** **A.** I've rarely seen anything greater than
 16:56:53 **15** 1-to-1, 2-to-1, 3-to-1.
 16:57:00 **16** **Q.** The question is do you agree with that
 16:57:02 **17** statement, yes or no?
 16:57:03 **18** **A.** That's too broad. I mean, I would say
 16:57:06 **19** crushed particles of nonregulated asbestos fibers and
 16:57:13 **20** bundles, the aspect ratio very rarely exceeds 3-to-1,
 16:57:18 **21** 4-to-1.
 16:57:19 **22** **Q.** Okay. ISO -- strike that.
 16:57:24 **23** What is the average width of a tremolite
 16:57:28 **24** fiber under the TEM?
 16:57:31 **25** MR. CIRSCH: Object to form.
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16:57:31 **1** THE WITNESS: An individual fiber
 16:57:32 **2** typically can run anywhere from about .2 to .4,
 16:57:39 **3** seen some as high as .5 for an individual fiber.
 16:57:42 **4** **Q.** (By Mr. Chachkes) Okay. Do you have a
 16:57:44 **5** peer-reviewed reference to support that?
 16:57:50 **6** MS. O'DELL: Your original question was
 16:57:52 **7** what he had seen.
 16:57:54 **8** MR. CHACHKES: Actually, no. The original
 16:57:55 **9** question was what is the average width.
 16:57:56 **10** THE WITNESS: I think if you look at Wylie
 16:57:58 **11** and others, they say that single tremolite or
 16:58:01 **12** single amphibole fibers very rarely exceed .5,
 16:58:04 **13** .6. So there's a number of references out
 16:58:07 **14** there. I can't remember all the citations, but
 16:58:09 **15** there's a number of references on that.
 16:58:11 **16** **Q.** (By Mr. Chachkes) The question is do you
 16:58:12 **17** have a peer-reviewed reference to cite to to support
 16:58:15 **18** your testimony that the average width of a tremolite
 16:58:18 **19** fiber is usually between .2 and .4?
 16:58:21 **20** MR. CIRSCH: Object to form.
 16:58:22 **21** THE WITNESS: I've seen as high as .5.
 16:58:25 **22** There's a range. And it's been published
 16:58:28 **23** before, but no, I don't have the citation on me.
 16:58:30 **24** **Q.** (By Mr. Chachkes) What's the average
 16:58:31 **25** width of an anthophyllite fiber under TEM?
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242

16:58:37 **1** MR. CIRSCH: Object to form.
 16:58:37 **2** THE WITNESS: Typically in the same range
 16:58:40 **3** as tremolite.
 16:58:41 **4** **Q.** (By Mr. Chachkes) And do you have a
 16:58:44 **5** citation for a peer-reviewed paper to support that?
 16:58:47 **6** **A.** Not that I can rattle off the top of my
 16:58:51 **7** head, no, sir.
 16:58:52 **8** **Q.** What's the largest width an anthophyllite
 16:58:54 **9** particle can have and still be characterized as a
 16:58:57 **10** fiber under TEM?
 16:59:00 **11** MR. CIRSCH: Object to form.
 16:59:01 **12** MS. O'DELL: Would you repeat that,
 16:59:03 **13** please?
 16:59:03 **14** **Q.** (By Mr. Chachkes) What is the largest
 16:59:04 **15** width of an anthophyllite particle -- strike that.
 16:59:08 **16** What is the largest width an anthophyllite
 16:59:10 **17** particle can have and still be characterized as a
 16:59:12 **18** fiber under TEM?
 16:59:14 **19** **A.** Whatever width that will exceed equal to
 16:59:22 **20** 5-to-1 aspect ratio. So it doesn't have a cutoff on
 16:59:26 **21** the width for a single fiber. As long as it
 16:59:32 **22** exceeds -- greater than or equal to 5 -- aspect ratio
 16:59:35 **23** of 5.
 16:59:36 **24** **Q.** So the width doesn't matter; it's the
 16:59:38 **25** aspect ratio that matters?
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16:59:40 **1** **A.** Correct.
 16:59:40 **2** **Q.** Okay. Do you have a reference,
 16:59:43 **3** peer-reviewed reference, to cite for that?
 16:59:45 **4** **A.** Every one of the counting protocols do not
 16:59:48 **5** have a maximum on the width. They all have the same
 16:59:52 **6** counting protocol for the aspect ratios for the
 16:59:56 **7** length, for greater than .5 micrometers. So they're
 17:00:00 **8** all the same.
 17:00:01 **9** I'm not aware of any of these
 17:00:02 **10** peer-reviewed publications, protocols, stating that
 17:00:08 **11** there is a maximum width.
 17:00:11 **12** MR. CIRSCH: We've been going about an
 17:00:12 **13** hour, so when you get to the next spot, can we
 17:00:15 **14** take a break?
 17:00:16 **15** MR. CHACHKES: Sure. Give me maybe like 5
 17:00:17 **16** more minutes; is that okay?
 17:00:18 **17** MR. CIRSCH: It's up to the doctor.
 17:00:18 **18** THE WITNESS: I would like to take a break
 17:00:20 **19** now.
 17:00:20 **20** **Q.** (By Mr. Chachkes) Okay. Can I just
 17:00:22 **21** ask -- let me ask one more --
 17:00:22 **22** **A.** Okay.
 17:00:24 **23** **Q.** -- because it's just basically the same
 17:00:25 **24** one, tremolite.
 17:00:26 **25** What is the largest width a tremolite
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244

17:00:28 **1** particle can have and still be characterized as a
 17:00:30 **2** fiber under TEM? Is it same answer?
 17:00:32 **3** **A.** It's the same answer. Now, we don't see
 17:00:34 **4** any single fibers with widths that exceed or that are
 17:00:39 **5** any width. I mean, it's in that range that I've
 17:00:42 **6** talked about.
 17:00:43 **7** Typically, when it gets larger, it is a
 17:00:45 **8** bundle, and you can have -- we've had bundles as wide
 17:00:49 **9** as 1 to 2 micrometers in diameter, but that's made up
 17:00:53 **10** of -- something that big is made up tens to hundreds
 17:00:57 **11** of individual fibers.
 17:00:57 **12** **Q.** But hypothetically, you see a tremolite
 17:00:58 **13** particle with a width of 1, you would still
 17:01:01 **14** characterize that as a fiber if the aspect ratio was
 17:01:06 **15** in the right range?
 17:01:08 **16** MR. CIRSCH: Object to form.
 17:01:09 **17** THE WITNESS: Hypothetically, because I
 17:01:11 **18** don't believe we've ever seen one in any of
 17:01:13 **19** these protocol -- any of these analyses. But if
 17:01:14 **20** it has -- if it meets the peer-reviewed counting
 17:01:18 **21** rules for regulated asbestos, yes, it would be
 17:01:21 **22** counted, hypothetically.
 17:01:23 **23** MR. CHACHKES: Okay. Let's take a break.
 17:01:25 **24** (Recess from 5:01 p.m. to 5:20 p.m.)
 17:21:00 **25** **Q.** (By Mr. Chachkes) Going back to
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17:21:07 **1** Exhibit 21, which is ISO 13794, now, 2.7, that's a
 17:21:16 **2** definition of asbestos; correct?
 17:21:20 **3** **A.** 2.7?
 17:21:21 **4** **Q.** Yes. On page 2.
 17:21:23 **5** **A.** Oh.
 17:21:42 **6** **Q.** Is that a definition of asbestos?
 17:21:45 **7** **A.** That's their definition, yes, sir.
 17:21:47 **8** **Q.** Okay. Now, I've heard you use the phrase,
 17:21:50 **9** the distinction, geological and regulatory
 17:21:54 **10** definitions as if they were different. Which one is
 17:21:57 **11** this?
 17:21:58 **12** **A.** It's just a general definition.
 17:22:04 **13** **Q.** Okay. It's not a geological definition,
 17:22:07 **14** it's not a regulatory definition, it's just a
 17:22:09 **15** definition?
 17:22:10 **16** **A.** Let's see. Crystallized in asbestiform
 17:22:14 **17** habit. That's for both. Long, thin, flexible,
 17:22:18 **18** strong fibers when crushed or processed. They don't
 17:22:20 **19** define what strong is, but that's just a general
 17:22:23 **20** definition.
 17:22:23 **21** **Q.** Okay. Is it your opinion that there's no
 17:22:28 **22** such thing as a cleavage fragment for something that
 17:22:31 **23** has a greater than 5-to-1 aspect ratio?
 17:22:33 **24** **A.** I never said that.
 17:22:34 **25** **Q.** Okay. Is there such a thing as a cleavage
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17:23:48 **1** **Q.** Is it written down?
 17:23:51 **2** **A.** Yes.
 17:23:51 **3** **Q.** Have you produced it?
 17:23:53 **4** **A.** No.
 17:23:54 **5** **MR. CHACHKES:** Okay. We'd like that
 17:23:56 **6** produced.
 17:23:56 **7** **MS. O'DELL:** We'll consider it.
 17:23:57 **8** **Q.** (By Mr. Chachkes) Okay. Does MAS have a
 17:23:58 **9** protocol in place for describing the dimensions of
 17:24:01 **10** fibers -- sorry.
 17:24:10 **11** What do you call that protocol? Is there
 17:24:12 **12** a name for it?
 17:24:13 **13** **A.** Well, the protocol is the method we have
 17:24:16 **14** here. It tells you how to make those measurements.
 17:24:18 **15** It has -- the microscopes have calibrated concentric
 17:24:24 **16** circles that allow you to make the measurements for
 17:24:28 **17** greater than .5 micrometers. It is -- parallel sides
 17:24:33 **18** is a visual determination.
 17:24:37 **19** **MR. CHACHKES:** Let's look at that. Let's
 17:24:39 **20** look at some TEM photomicrographs. Can we mark
 17:24:43 **21** this Exhibit 22? Can we just put the sticker
 17:24:52 **22** here so it doesn't obstruct anything?
 17:24:54 **23** (Defendants' Exhibit 22 was marked for
 17:25:15 **24** identification.)
 17:25:15 **25** **Q.** (By Mr. Chachkes) All right. Look at
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246
 17:22:40 **1** fragment for something that has a greater than 5-to-1
 17:22:41 **2** aspect ratio?
 17:22:41 **3** **A.** With parallel sides we've not seen one,
 17:22:44 **4** but I guess hypothetically it's possible.
 17:22:46 **5** **Q.** Okay. Is there anything in the published
 17:22:55 **6** literature that you've seen that suggests that there
 17:22:58 **7** are cleavage fragments with a greater than 5-to-1
 17:23:02 **8** aspect ratio?
 17:23:02 **9** **A.** There's been a number of published
 17:23:05 **10** articles that state things like that, yes.
 17:23:08 **11** **Q.** Are there any published articles that
 17:23:11 **12** state that there are cleavage fragments that have
 17:23:13 **13** greater than 3-to-1 aspect ratio?
 17:23:15 **14** **A.** Yes, there is publications that state
 17:23:19 **15** that.
 17:23:19 **16** **Q.** Okay. If I pulled a hand-sized amphibole
 17:23:27 **17** rock out that had a greater than 5-to-1 aspect ratio,
 17:23:32 **18** would you call that a fiber?
 17:23:34 **19** **MR. CIRSCH:** Object to form.
 17:23:34 **20** **THE WITNESS:** If it is a rock and doesn't
 17:23:36 **21** have any parallel sides that define a fiber, no.
 17:23:40 **22** **Q.** (By Mr. Chachkes) Does MAS have a
 17:23:42 **23** protocol in place for describing the dimensions of
 17:23:44 **24** fibers under the visual inspection under TEM?
 17:23:47 **25** **A.** Yes.
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248
 17:25:16 **1** Exhibit 22. Can you tell me what -- that very top
 17:25:22 **2** row of three, is that asbestiform fibers, if you knew
 17:25:28 **3** you were looking at an amphibole?
 17:25:30 **4** **A.** Top row, this one?
 17:25:32 **5** **Q.** Yeah.
 17:25:34 **6** **A.** Just looking at the photograph, I would
 17:25:38 **7** state that that is a regulated asbestos size --
 17:25:41 **8** asbestiform or not for these different photographs.
 17:25:48 **9** **Q.** All right.
 17:25:52 **10** **A.** Certainly one, I would say two. I'd have
 17:25:55 **11** to be looking at that under a TEM to make that
 17:25:57 **12** determination if it's asbestiform or not. It
 17:26:01 **13** certainly has the aspect ratio; it has parallel
 17:26:02 **14** sides. That would be a regulated asbestos, at least
 17:26:10 **15** in TEM. It's unclear. This may be -- this may be
 17:26:13 **16** optical microscopy.
 17:26:17 **17** **Q.** That third one on the very top row, what
 17:26:20 **18** could you see under TEM or do under TEM that would
 17:26:25 **19** make you say, oh, that's not regulated asbestos,
 17:26:26 **20** assuming it's an amphibole?
 17:26:28 **21** **A.** Well I would have to be looking at it
 17:26:32 **22** under the TEM so -- you're looking at an optical
 17:26:33 **23** microscopy picture.
 17:26:36 **24** **Q.** But what is it you would be -- what is it
 17:26:36 **25** that you could see under a TEM that would make you
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17:26:38 **1** think that's not -- because the aspect ratio
17:26:40 **2** obviously is greater than 5-to-1; right?
17:26:41 **3** **A.** Well, I would take a look at it and see
17:26:43 **4** parallel sides, is that multiple fibers. I don't
17:26:48 **5** know what magnification this is at.
17:26:50 **6** So again, I would prefer to be looking at
17:26:51 **7** something under a TEM than just play
17:26:54 **8** guess-what-this-is.
17:26:54 **9** **Q.** Okay. So it's possible what you're
17:26:56 **10** looking at there which has an aspect ratio of -- it's
17:27:00 **11** greater than 5-to-1; right?
17:27:01 **12** **A.** That's correct.
17:27:02 **13** **Q.** Okay. It's possible that that's not --
17:27:04 **14** that's nonasbestiform if it doesn't have parallel
17:27:08 **15** sides; is that true?
17:27:09 **16** **A.** Again, this is an optical microscopy
17:27:11 **17** picture. So unless I was looking at this under the
17:27:14 **18** TEM, but certainly has parallel sides. I don't know
17:27:17 **19** the width. I can't really make out the micron bar, I
17:27:21 **20** don't know the magnification.
17:27:22 **21** So you'll have to get some other expert to
17:27:25 **22** take a look at it, if he's willing to opine what that
17:27:29 **23** is versus the counting rules in the TEM.
17:27:32 **24** **Q.** In the second row, assuming that
17:27:36 **25** everything in the second row is amphibole, would you
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250

17:27:40 **1** call those asbestiform or not?
17:27:44 **2** **A.** Again, I'm looking at an optical
17:27:51 **3** microscopy picture. We've got a bundle that -- I
17:27:58 **4** mean, I can't look at the micron bar. Possibly just
17:28:01 **5** the one in the middle because you can see individual
17:28:03 **6** fibrils.
17:28:04 **7** **Q.** Okay. If you saw that under your TEM,
17:28:07 **8** would you label that as asbestos?
17:28:08 **9** **A.** Well, I'm not looking at it under TEM. So
17:28:13 **10** if it's under an optical microscopy method and it
17:28:16 **11** meets the definition, it's got parallel sides, it
17:28:20 **12** looks like it has multiple fibers in the bundle, that
17:28:23 **13** by definition is asbestiform.
17:28:25 **14** **Q.** And why do you say it looks like it has
17:28:28 **15** multiple fibers in the bundle?
17:28:29 **16** **A.** Because I can see them.
17:28:30 **17** **Q.** Okay. You're referring to the lines that
17:28:34 **18** go from the northwest towards the southeast starting
17:28:36 **19** in the top?
17:28:37 **20** **A.** Yes, sir.
17:28:37 **21** **Q.** Okay. In the third row, assuming those
17:28:40 **22** are amphiboles, do you have enough information to
17:28:44 **23** determine whether they're asbestiform?
17:28:46 **24** **A.** I can't really see what we have here under
17:28:50 **25** these. And I'm assuming the fourth and five row --
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17:28:56 **1** **Q.** Well, let's not get ahead of ourselves.
17:29:00 **2** Now, in the third row, do you have enough
17:29:04 **3** information from these pictures to see whether
17:29:07 **4** they're bundles or fibers?
17:29:09 **5** **A.** No. It's too out of focus.
17:29:12 **6** **Q.** Okay.
17:29:12 **7** **A.** I would -- looks like you have dark field
17:29:15 **8** here. I would have to see this in the TEM.
17:29:17 **9** **Q.** Okay. In the second row, far left, do you
17:29:21 **10** have enough -- does it appear to you whether there
17:29:24 **11** are bundles or fibers?
17:29:25 **12** **A.** No, you can't make out. Most of these are
17:29:27 **13** just particles. And I would have to be looking at
17:29:31 **14** this one that has parallel sides. But I would have
17:29:36 **15** to be determining if I could see individual fibers in
17:29:38 **16** it or not.
17:29:39 **17** **Q.** In the fourth row, second from the bottom,
17:29:46 **18** are these asbestiform?
17:29:48 **19** **A.** Maybe.
17:29:50 **20** **Q.** What additional information would you need
17:29:53 **21** to determine that?
17:29:53 **22** **A.** I need to be looking at it in the TEM
17:29:58 **23** or -- so that I can make a determination. The size,
17:30:02 **24** the magnification.
17:30:08 **25** **Q.** Do you have enough information in the
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252

17:30:10 **1** second -- in that second-to-last row, those three
17:30:13 **2** pictures, to determine whether that's asbestiform?
17:30:15 **3** **A.** I wouldn't make that call either way
17:30:19 **4** unless I could be looking at it under the TEM. It
17:30:22 **5** looks like very little magnification. And I
17:30:25 **6** apologize, but they're fairly poor photographs.
17:30:28 **7** **Q.** Okay. In the last row, same question. In
17:30:31 **8** those three pictures at the very bottom of
17:30:34 **9** Exhibit 22, are those -- see the single fibers -- the
17:30:37 **10** single item in the middle, would you call that
17:30:40 **11** asbestiform?
17:30:41 **12** **A.** It has parallel sides. I can't see
17:30:48 **13** individual fibers. But I would call that a regulated
17:30:52 **14** asbestos fiber or bundle, maybe.
17:30:55 **15** Again, I would need to be looking at the
17:30:57 **16** TEM analysis of these or at least better photographs.
17:31:01 **17** **Q.** Okay. So the bottom six are all TEM
17:31:08 **18** photomicrographs from you? You realize that; right?
17:31:12 **19** MR. CIRSCH: Object to form.
17:31:13 **20** THE WITNESS: And that's fine. If you
17:31:14 **21** tell me which ones they are, at least I can get
17:31:17 **22** better images.
17:31:17 **23** **Q.** (By Mr. Chachkes) These are the images
17:31:20 **24** you provided to us; right?
17:31:22 **25** **A.** Well, when we provide the book, we provide
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17:31:25 **1** a large photograph that has better resolution,
 17:31:30 **2** et cetera.
 17:31:33 **3** **Q.** Okay. Yeah, let's go look at -- let's
 17:31:35 **4** look in the book, the upper left. So from the
 17:31:38 **5** bottom -- what?
 17:31:44 **6** MS. TROVATO: I'll let you know which one
 17:31:45 **7** I have marked.
 17:31:47 **8** MR. CHACHKES: Okay. I'm going to grab
 17:31:48 **9** one for you from the book. Just tear it out.
 17:31:54 **10** Okay. Let's mark it as Exhibit 23.
 17:31:59 **11** (Defendants' Exhibit 23 was marked for
12 identification.)
 17:32:21 **13** (Off the record.)
 17:32:21 **14** **Q.** (By Mr. Chachkes) Okay. So around
 17:32:23 **15** page 985. Okay. So this one corresponds to second-
 17:32:28 **16** to-the-last row, far right; correct?
 17:32:34 **17** **A.** Yes.
 17:32:34 **18** **Q.** Okay. Are you looking at something that's
 17:32:36 **19** asbestiform there?
 17:32:37 **20** **A.** I'm looking at a regulated asbestos
 17:32:43 **21** structure. We have talc underneath it. But I would
 17:32:46 **22** see individual fibers -- you know, I'm not on the
 17:32:51 **23** TEM. This is only 1/2 micrometer in width, but it
 17:32:54 **24** looks like we have individual fibers in here. So
 17:32:56 **25** yes.
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254

17:32:56 **1** **Q.** Okay. Is this -- so for those of us who
 17:33:03 **2** are trying to determine whether you made the right
 17:33:05 **3** call, is this photomicrograph enough to determine the
 17:33:08 **4** morphology of what we're looking at?
 17:33:13 **5** **A.** Yes.
 17:33:14 **6** **Q.** Okay. In your old reports, the reports
 17:33:33 **7** that were the non-MDL samples, would you agree that
 17:33:36 **8** you characterized the majority of the particles
 17:33:38 **9** identified as fibrous, not bundles?
 17:33:41 **10** MR. CIRSCH: Object to form.
 17:33:42 **11** THE WITNESS: I don't think I ever counted
 17:33:45 **12** them up.
 17:33:45 **13** **Q.** (By Mr. Chachkes) Okay. In your MDL --
 17:33:50 **14** but the majority, the large majority is fiber, not
 17:33:53 **15** bundles in the old MDL reports?
 17:33:56 **16** MS. O'DELL: Object to form.
 17:33:56 **17** THE WITNESS: I'm not sure I agree with
 17:33:58 **18** that.
 17:33:58 **19** **Q.** (By Mr. Chachkes) I'm sorry, the old
 17:33:59 **20** non-MDL reports.
 17:34:00 **21** **A.** I'd have to look at them to see if I agree
 17:34:03 **22** with that or not.
 17:34:03 **23** **Q.** Okay. In your new -- the MDL reports,
 17:34:07 **24** about 96 percent of the particles your analysts
 17:34:11 **25** identify are bundles; correct?
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17:34:12 **1** **A.** Correct.
 17:34:12 **2** **Q.** If there's a stark difference between the
 17:34:18 **3** ratio of fibers to bundle found as compared between
 17:34:21 **4** the MDL sample analysis and the non-MDL sample
 17:34:25 **5** analysis, what would explain that?
 17:34:26 **6** MR. CIRSCH: Object to form.
 17:34:27 **7** THE WITNESS: That there was more bundles
 17:34:29 **8** than fibers.
 17:34:30 **9** **Q.** (By Mr. Chachkes) Aren't they supposed to
 17:34:31 **10** be the same thing, representative sample of J&J talc?
 17:34:35 **11** MR. CIRSCH: Object to form.
 17:34:35 **12** THE WITNESS: Not necessarily.
 17:34:36 **13** **Q.** (By Mr. Chachkes) Why not?
 17:34:37 **14** **A.** It's just a matter of where -- the area in
 17:34:40 **15** the mine and what was dug out, if that was correct,
 17:34:42 **16** then we should say that all J&J talc has these
 17:34:46 **17** concentrations of asbestos. So that doesn't bother
 17:34:50 **18** me.
 17:34:50 **19** **Q.** You think it might be random chance that
 17:34:55 **20** the same mine samples in your old reports you report
 17:35:00 **21** majority of fibers, and in your new reports you
 17:35:04 **22** report as almost exclusively bundles?
 17:35:06 **23** MR. CIRSCH: Object to form.
 17:35:08 **24** THE WITNESS: We just call them as we see
 17:35:09 **25** them.
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256

17:35:10 **1** **Q.** (By Mr. Chachkes) But is it random
 17:35:11 **2** chance? That's what I'm asking.
 17:35:12 **3** **A.** I don't know if it's random chance or not.
 17:35:16 **4** These are what we distinguish as fibers and bundles.
 17:35:20 **5** **Q.** Okay. One would expect a random sample of
 17:35:23 **6** bottles from a Vermont mine over time to have the
 17:35:27 **7** same ratio whether you are looking last year or this
 17:35:30 **8** year; right?
 17:35:31 **9** MR. CIRSCH: Object to form.
 17:35:32 **10** THE WITNESS: I'm only aware of in the old
 17:35:36 **11** samples that there was two that could be said
 17:35:39 **12** came from Vermont. So we're looking at a much
 17:35:42 **13** bigger population of Vermont samples than we
 17:35:45 **14** were of the originals. And one of those was a
 17:35:50 **15** MDL sample. So you're comparing apples and
 17:35:54 **16** oranges.
 17:35:55 **17** **Q.** (By Mr. Chachkes) What about the Italian?
 17:35:56 **18** **A.** The Italian, I'd have to look at it and
 17:36:01 **19** count them up because there wasn't that many fibers
 17:36:04 **20** as compared to the others, so we have a bigger pool
 17:36:06 **21** of fibers and bundles.
 17:36:07 **22** **Q.** If you did the entire set of MDL samples
 17:36:10 **23** over again, would you expect to find the same ratio
 17:36:13 **24** of bundles to fibers?
 17:36:17 **25** MR. CIRSCH: Object to form.
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17:36:17 **1** THE WITNESS: I don't have any expectation
 17:36:19 **2** of what we're going to find or what we expect.
 17:36:21 **3** We just count using the protocols and make the
 17:36:25 **4** decision on what morphology it is.
 17:36:27 **5** **Q.** (By Mr. Chachkes) Okay. Have you
 17:36:28 **6** testified that the modified Blount TEM method you
 17:36:31 **7** employed in your March 2018 report is materially
 17:36:35 **8** identical to the ISO 22262?
 17:36:37 **9** **A.** I don't think I -- it's not identical.
 17:36:43 **10** The old Blount report uses a different heavy density
 17:36:47 **11** liquid separation. But the ISO, we can use the same
 17:36:52 **12** spin rate, same time for rpm and spin rate.
 17:36:59 **13** But the difference is the -- even the old
 17:37:03 **14** Blount is the same. And that's -- what's interesting
 17:37:06 **15** about the ISO 22262-2, it gives you the leeway to use
 17:37:11 **16** whatever you need to use. And the only thing it
 17:37:16 **17** really specifies is the density of the heavy liquid.
 17:37:21 **18** **Q.** You used the Blount TEM method in your
 17:37:23 **19** March 2018 report; correct?
 17:37:24 **20** **A.** Correct.
 17:37:24 **21** **Q.** Was it materially identical to what's
 17:37:28 **22** mandated in ISO 22262?
 17:37:32 **23** **A.** ISO 22262 doesn't mandate any particular
 17:37:35 **24** conditions. So you can use whatever procedures you
 17:37:41 **25** feel work the best. And that's because the spin
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258

17:37:45 **1** rates and rpm does not really affect the overall
 17:37:48 **2** concentrations, and it happened to be the same
 17:37:51 **3** density, liquid density.
 17:37:53 **4** **Q.** You've testified that the same four
 17:37:56 **5** associates at MAS have conducted all of MAS's
 17:37:58 **6** analysis of Johnson's Baby Powder in your reports
 17:38:01 **7** going all the way back to 2017; is that correct?
 17:38:03 **8** **MR. CIRSCH:** Object to form.
 17:38:04 **9** **THE WITNESS:** We have some of the same
 17:38:08 **10** people, yes.
 17:38:09 **11** **Q.** (By Mr. Chachkes) Okay. What about are
 17:38:11 **12** they the same? Is it the same people who were
 17:38:13 **13** doing -- analyzing Johnson Baby Powder in early 2017
 17:38:19 **14** as are doing it now?
 17:38:22 **15** **A.** You'll have to clarify that question.
 17:38:25 **16** **Q.** Well, there were four people doing
 17:38:28 **17** analysis in the MDL report; right?
 17:38:30 **18** **A.** Correct.
 17:38:30 **19** **Q.** There are four people doing analysis in
 17:38:33 **20** the reports that rely on research all the way back
 17:38:39 **21** to -- analysis all the way back to 2017; correct?
 17:38:42 **22** **A.** I'd have to look at that.
 17:38:43 **23** **Q.** Okay. I'm asking is it the same four
 17:38:46 **24** people? You don't know?
 17:38:48 **25** **MR. CIRSCH:** Object to the form.
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17:38:49 **1** THE WITNESS: I'd have to look and see who
 17:38:50 **2** the four people are because there are some folks
 17:38:53 **3** who started doing, you know, analysis now may
 17:38:57 **4** not have been doing analysis then, and there's
 17:38:59 **5** some folks doing analysis then that are not
 17:39:02 **6** doing analysis now. It's just easy to look in
 17:39:05 **7** the count sheets and see if they're the same or
 17:39:08 **8** not.
 17:39:08 **9** **Q.** (By Mr. Chachkes) Is there additional
 17:39:12 **10** data concerning the samples upon which you reported
 17:39:15 **11** for TEM that is in a file somewhere in your
 17:39:20 **12** laboratory but not printed out and not produced?
 17:39:22 **13** **A.** All the data for these particular samples
 17:39:25 **14** are here.
 17:39:25 **15** **Q.** Okay. Was there any data generated in
 17:39:28 **16** connection with the TEM analysis in this case that
 17:39:30 **17** was thrown away or deleted?
 17:39:32 **18** **A.** No, not that I'm aware of.
 17:39:34 **19** **Q.** You personally have not conducted any of
 17:39:37 **20** the PLM testing included in your MDL report; correct?
 17:39:40 **21** **A.** That is correct.
 17:39:40 **22** **Q.** Did you sit with your analysts as they did
 17:39:42 **23** the PLM testing?
 17:39:45 **24** **A.** I have probably looked in that optical
 17:39:47 **25** microscope 50 times in the last two months.
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260

17:39:50 **1** **Q.** So when you say you've looked in it,
 17:39:52 **2** you've looked in it while your analysts were testing
 17:39:58 **3** MDL samples for the purposes of your current report?
 17:40:00 **4** **A.** Well, you can't -- both of you can't look
 17:40:02 **5** in the microscope at the same time. A lot of times
 17:40:05 **6** it's on the monitor that we use so that we can
 17:40:09 **7** increase the sensitivity. But, no, I don't
 17:40:12 **8** personally do the PLM analysis.
 17:40:14 **9** **Q.** Yeah, but I'm trying to get the sense of
 17:40:16 **10** were you actively involved looking through the
 17:40:20 **11** microscope or looking along with the other person
 17:40:23 **12** into the microscope for the PLM that's reported on in
 17:40:25 **13** the MDL?
 17:40:27 **14** **A.** I have been active with the PLM
 17:40:29 **15** microscopists looking at structures, looking at
 17:40:34 **16** different aspects of it, but ultimately he makes the
 17:40:38 **17** decision.
 17:40:38 **18** **Q.** Okay. So the decisions -- the opinions in
 17:40:43 **19** your report about whether the PLM was a positive for
 17:40:46 **20** asbestos, those are the opinions of your analysts?
 17:40:50 **21** **A.** It's not an opinion.
 17:40:51 **22** **MS. O'DELL:** Form.
 17:40:52 **23** **THE WITNESS:** It meets the definition. It
 17:40:54 **24** has the right crystalline information. It meets
 17:40:58 **25** all the different definitions. To me, that is
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17:41:00 **1** not an opinion.
 17:41:01 **2 Q.** (By Mr. Chachkes) Okay. Those are the
 17:41:03 **3** conclusions of your analysts?
 17:41:05 **4 A.** Yes.
 17:41:06 **5 Q.** Okay. You have personally never tested a
 17:41:08 **6** talc sample for asbestos from start to finish
 17:41:10 **7** yourself?
 17:41:11 **8 A.** That is correct.
 17:41:11 **9 Q.** You're not trained in using PLM for the
 17:41:14 **10** purposes of testing talc for asbestos?
 17:41:17 **11** MR. CIRSCH: Object to form.
 17:41:18 **12** THE WITNESS: I have not taken a PLM
 17:41:20 **13** course for asbestos.
 17:41:20 **14 Q.** (By Mr. Chachkes) You've not published
 17:41:25 **15** any PLM methodologies?
 17:41:27 **16 A.** No, sir. We're not using our
 17:41:29 **17** methodologies. We're using the standard protocol
 17:41:33 **18** methodologies. So if we were to publish -- when we
 17:41:36 **19** publish this, we would be publishing that this is the
 17:41:39 **20** method we used. That's like everybody else.
 17:41:42 **21 Q.** Have you published any PLM work testing
 17:41:44 **22** for asbestos in any context?
 17:41:47 **23 A.** Yes.
 17:41:51 **24 Q.** What is it?
 17:41:52 **25 A.** Our gasket study, our vermiculite studies,
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262
 17:41:59 **1** our -- that have been published. A number of papers
 17:42:03 **2** are published where it's going to be a study on
 17:42:05 **3** exposure. You usually have to determine what the
 17:42:08 **4** concentration of asbestos is in the materials before
 17:42:11 **5** you publish that.
 17:42:12 **6 Q.** Those are published in peer-reviewed
 17:42:14 **7** literature?
 17:42:14 **8 A.** Yes, sir.
 17:42:15 **9 Q.** Okay. But those are not finding asbestos
 17:42:17 **10** in talc; right?
 17:42:21 **11 A.** No, sir. These are all construction
 17:42:25 **12** products.
 17:42:26 **13 Q.** Are you an expert in PLM?
 17:42:30 **14 A.** I think I know more than the average
 17:42:32 **15** layperson.
 17:42:32 **16 Q.** Are you an expert in PLM?
 17:42:36 **17** MR. CIRSCH: Object to form.
 17:42:37 **18** THE WITNESS: Again, that's up to a judge
 17:42:38 **19** to be an expert.
 17:42:39 **20** I know how the analysis is done, I could
 17:42:42 **21** do an analysis if I -- it would take me a lot
 17:42:46 **22** longer than what people typically do.
 17:42:47 **23 Q.** (By Mr. Chachkes) One of the
 17:42:48 **24** disadvantages of PLM that you cite is that it cannot
 17:42:51 **25** resolve particles less than 1/2 micrometer; is that
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17:42:56 **1** correct?
 17:42:56 **2 A.** Individual fibers, unless they have a
 17:42:58 **3** number of fibers in a bundle. But we don't see
 17:43:00 **4** individual fibers. In fact, we haven't seen any
 17:43:04 **5** individual fiber in any of these analyses that we've
 17:43:07 **6** done. They've all been very large bundles.
 17:43:09 **7 Q.** Is it unambiguously true that asbestos
 17:43:19 **8** particles must be at least 1/2 micrometer in the
 17:43:21 **9** smallest dimension to be visible under PLM?
 17:43:23 **10 A.** That's what's stated. We never see
 17:43:25 **11** individual fibers of any size. Everything that we
 17:43:30 **12** have run across is these very large bundles that have
 17:43:33 **13** multiple fibers in them.
 17:43:35 **14 Q.** But I'm talking about not what you're
 17:43:37 **15** actually seeing, but this is a matter of the
 17:43:41 **16** resolution.
 17:43:42 **17** Must asbestos particles be at least 1/2
 17:43:44 **18** micrometer in the smallest dimension to be visible
 17:43:49 **19** under PLM?
 17:43:49 **20 A.** It may be visible, but it's hard to go
 17:43:53 **21** through the dispersion staining and everything
 17:43:55 **22** associated to make a positive identification.
 17:43:57 **23** So maybe theoretically that's possible,
 17:44:01 **24** but it's not something that's routinely seen, that I
 17:44:04 **25** know of.
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264
 17:44:04 **1 Q.** Do you have the ability to detect asbestos
 17:44:08 **2** fibers with a width of approximately .3 micrometers
 17:44:13 **3** by PLM?
 17:44:15 **4 A.** Again, it may be theoretically possible,
 17:44:19 **5** but I'm not aware that it's routinely done. We've
 17:44:23 **6** never seen any in the cosmetic talc.
 17:44:25 **7 Q.** Shouldn't the particle distribution be on
 17:44:33 **8** a bell curve so that you would expect that some
 17:44:37 **9** exist?
 17:44:37 **10** MR. CIRSCH: Object to form.
 17:44:38 **11** THE WITNESS: I'm sure there is -- it is
 17:44:41 **12** in there because a lot of these we have positive
 17:44:43 **13** TEMs. But these two techniques have different
 17:44:47 **14** size distributions that they can see or they can
 17:44:49 **15** resolve or not resolve to be able to absolutely
 17:44:52 **16** determine if it is regulated asbestos or not.
 17:44:56 **17 Q.** (By Mr. Chachkes) Is it your position
 17:45:01 **18** that particles below 1/2 micrometer are not
 17:45:04 **19** resolvable because your analysts have never observed
 17:45:08 **20** particles of that width or smaller?
 17:45:09 **21 A.** It's my position that these are fibers,
 17:45:12 **22** and single fibers are not being resolved in this
 17:45:15 **23** matrix or seen by the PLM.
 17:45:20 **24 Q.** Is that because your analysts haven't
 17:45:22 **25** observed it, or is it just because of the nature of
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17:45:24 **1** the devices? Do you have some higher level
 17:45:27 **2** understanding of the nature of the devices?
 17:45:29 **3** MR. CIRSCH: Object to form.
 17:45:30 **4** **Q.** (By Mr. Chachkes) It is empirical or is
 17:45:32 **5** it something different?
 17:45:32 **6** MR. CIRSCH: Object to form.
 17:45:33 **7** THE WITNESS: I don't know if it's
 17:45:36 **8** empirical or not.
 17:45:37 **9** I mean, we haven't answered all the
 17:45:40 **10** questions about the PLM analysis of cosmetic
 17:45:43 **11** talc. But we do know that to do a PLM analysis
 17:45:48 **12** properly, you have to spend the time necessary.
 17:45:51 **13** You have to look at the sample in dispersion
 17:45:56 **14** staining. You need a high definition camera as
 17:45:58 **15** well as a monitor so that you can resolve and
 17:46:02 **16** get the focal plane necessary to see individual
 17:46:04 **17** fibers.
 17:46:06 **18** But we haven't run across individual
 17:46:08 **19** fibers. I know every protocol says, well, you
 17:46:10 **20** can see down to .5, you can see down to .3.
 17:46:14 **21** There's one thing about seeing them. There's
 17:46:16 **22** another thing going through the process of being
 17:46:18 **23** able to see the colors in the dispersion
 17:46:21 **24** staining, the extinction angle.
 17:46:24 **25** I just don't know if that's really
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266

17:46:26 **1** possible because this type of matrix that we're
 17:46:30 **2** looking at is so different than what PLM
 17:46:32 **3** analysts are typically dealing with.
 17:46:35 **4** **Q.** (By Mr. Chachkes) Did MAS test any talcum
 17:46:41 **5** powder samples with the ISO 22262 method prior to the
 17:46:44 **6** analysis included in your reports in this case?
 17:46:47 **7** MR. CIRSCH: Object to form.
 17:46:48 **8** THE WITNESS: No. I mean, we may have --
 17:46:51 **9** you know, we're slowly trying to work through
 17:46:54 **10** the old non-MDLs so that we can compare apples
 17:46:58 **11** to oranges. But when we get done with that,
 17:47:03 **12** we'll issue another report.
 17:47:03 **13** **Q.** (By Mr. Chachkes) Have you analyzed the
 17:47:05 **14** old talcum powder samples under ISO 22262 recently?
 17:47:12 **15** **A.** I don't know. I haven't been focused in
 17:47:15 **16** on that. There may be some done.
 17:47:17 **17** **Q.** Is it possible -- strike that.
 17:47:22 **18** ISO 22262 method is promulgated by the
 17:47:28 **19** International Organization for Standardization; is
 17:47:28 **20** that correct?
 17:47:29 **21** **A.** Yes, sir.
 17:47:29 **22** **Q.** Are you currently a member of any of the
 17:47:32 **23** ISO national standards bodies?
 17:47:33 **24** **A.** I am not.
 17:47:34 **25** **Q.** Did you vote on any of the ISO standards?
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17:47:37 **1** **A.** I did not.
 17:47:39 **2** **Q.** Did you participate in the drafting of any
 17:47:42 **3** ISO standards?
 17:47:43 **4** **A.** I did not.
 17:47:44 **5** **Q.** Have you spoken with any of the authors of
 17:47:46 **6** any of the ISO standards that we talked about today?
 17:47:50 **7** **A.** Not in some time, but not specifically
 17:47:53 **8** about the 22262-1 and 2.
 17:47:55 **9** **Q.** What about 3?
 17:47:57 **10** **A.** No, sir, I haven't spoken to anybody about
 17:48:00 **11** 3 -- any of the authors of 3.
 17:48:01 **12** **Q.** Which of the three parts of the ISO 22262
 17:48:06 **13** did your analysts employ in the analysis of the ISO
 17:48:11 **14** PLM portion of your report?
 17:48:15 **15** MR. CIRSCH: Object to form.
 17:48:16 **16** THE WITNESS: All the counting rules, all
 17:48:18 **17** the -- what's defined as asbestiform, what's the
 17:48:22 **18** 20-to-1. Everything that's used in there.
 17:48:26 **19** **Q.** (By Mr. Chachkes) So you're saying it
 17:48:28 **20** didn't matter, it's the same in all of 1 -- part 1,
 17:48:31 **21** part 2, and part 3?
 17:48:32 **22** **A.** Well, I misunderstood the question.
 17:48:34 **23** **Q.** Yeah, let me ask it again a little better.
 17:48:36 **24** Which of part 1, part 2, or part 3 did
 17:48:41 **25** your analysts use when they analyzed the MDL samples
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268

17:48:48 **1** under PLM?
 17:48:49 **2** **A.** Part 1.
 17:48:49 **3** **Q.** Do you know when those methods in part 1
 17:48:53 **4** were promulgated?
 17:48:55 **5** **A.** Looks like 2012/07/01.
 17:49:06 **6** **Q.** What do you mean by 2012/07/01?
 17:49:12 **7** **A.** I'm just looking at when it says it was
 17:49:14 **8** issued. ISO -- so it has 2012, first edition, and I
 17:49:22 **9** don't know if they're using 07 as the day and 01 as
 17:49:26 **10** the month or the other way around.
 17:49:27 **11** **Q.** So part 1 was promulgated in 2012?
 17:49:31 **12** **A.** Yes, sir.
 17:49:31 **13** **Q.** Okay. Are you aware of any other talc
 17:49:34 **14** testing methods published in the scientific
 17:49:36 **15** literature from 1991 to 2014 that include a
 17:49:41 **16** concentration method?
 17:49:43 **17** **A.** Let's see. When was --
 17:49:46 **18** **Q.** You should use yours.
 17:49:49 **19** **A.** I'm just looking at the date.
 17:49:51 **20** This one was 2014.
 17:49:53 **21** **Q.** You say this one's part 2; correct?
 17:49:55 **22** **A.** Part 2.
 17:49:55 **23** **Q.** Yeah. So I'm saying between 1991 and
 17:49:58 **24** 2014, are you aware of any testing -- talc testing
 17:50:01 **25** methods in the published scientific literature that
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17:50:03 **1** include a concentration method?
 17:50:16 **2 A.** The 1989 and 1990 papers published by
 17:50:19 **3** Blount. She's analyzing talc. She's using the
 17:50:23 **4** concentration method.
 17:50:25 **5 Q.** Are you aware of any other?
 17:50:27 **6 A.** That specifically say talc, no.
 17:50:30 **7 Q.** Are you aware of any other talc testing
 17:50:33 **8** methods published in the scientific literature prior
 17:50:36 **9** to 1991 that include a concentration method?
 17:50:39 **10 A.** Not in the published literature, no.
 17:50:44 **11 Q.** One strength of PLM is that it can provide
 17:50:48 **12** a qualitative estimate of the weight percentage of
 17:50:52 **13** asbestos; true?
 17:50:53 **14 A.** That is a strength, yes.
 17:50:55 **15 Q.** What does the word qualitative mean in
 17:50:58 **16** that answer?
 17:50:59 **17 A.** That it's an estimate based on
 17:51:01 **18** petrographic standards for how much material is --
 17:51:09 **19** that you're estimating on.
 17:51:11 **20 Q.** Your analysts conducted a visual
 17:51:14 **21** estimation of the concentration of asbestos fibers in
 17:51:16 **22** the talc samples?
 17:51:17 **23 A.** Asbestos bundles, yes, sir.
 17:51:19 **24 Q.** Okay. Your report also references
 17:51:25 **25** generated weight percentage standards; correct?
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270

17:51:29 **1 A.** Yes.
 17:51:29 **2 Q.** How were your lab's weight percentage
 17:51:33 **3** standards generated?
 17:51:35 **4 A.** You mean the spike samples?
 17:51:37 **5 Q.** Yes.
 17:51:37 **6 A.** Taking that one JBP, I think it's number
 17:51:51 **7** 13, and then you mix the appropriate materials
 17:51:53 **8** together so that you get a weight percent -- a
 17:51:58 **9** weighted percent, where you put -- say,
 17:52:02 **10** hypothetically, you know, 5 grams of tremolite and
 17:52:05 **11** then you then dilute the sample with additional talc
 17:52:08 **12** to make it .1 or .2 or .3. Standard method.
 17:52:13 **13 Q.** Okay. Did you produce those generated
 17:52:16 **14** calculations?
 17:52:17 **15 A.** No.
 17:52:18 **16 Q.** Okay. We request that you produce those.
 17:52:20 **17** In your report you write that for positive
 17:52:25 **18** samples a visual estimation of the quantity of
 17:52:28 **19** asbestos observed was based on eye calibration
 17:52:32 **20** through review of lab-generated weight percentage
 17:52:36 **21** standards.
 17:52:36 **22** Does that ring a bell?
 17:52:38 **23 A.** Yes.
 17:52:38 **24 Q.** What is eye calibration?
 17:52:39 **25 A.** It's a petrographic term for when you're
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17:52:41 **1** looking at the area that is covered by the asbestos
 17:52:45 **2** versus the area that you're looking at. So there's
 17:52:48 **3** calibrated petrographic materials to help optical
 17:52:54 **4** microscopists to make these qualitative estimates.
 17:52:58 **5 Q.** How often do you update your lab's weight
 17:53:02 **6** percentage standards?
 17:53:03 **7 A.** I think we updated them the last time we
 17:53:08 **8** sent stuff to Lee Poye.
 17:53:10 **9 Q.** And what regularity -- with what
 17:53:14 **10** regularity do you update those?
 17:53:17 **11 A.** We don't have a regulatory. We make new
 17:53:19 **12** standards and send them off; and if we need
 17:53:22 **13** additional standards, we make them again.
 17:53:24 **14 Q.** Who generated those standards?
 17:53:25 **15 A.** Victoria Panariello.
 17:53:28 **16 Q.** Okay. Did you monitor her when she did
 17:53:31 **17** that?
 17:53:32 **18 A.** Did I sit here and -- stand there and
 17:53:34 **19** watch her? No.
 17:53:35 **20 Q.** Did you monitor her in any other way?
 17:53:37 **21 A.** No.
 17:53:37 **22 Q.** Are you aware your method includes a
 17:53:41 **23** qualification that visual estimations of asbestos
 17:53:43 **24** concentrations pursuant to this method have been
 17:53:46 **25** demonstrated to consistently yield an overestimate of
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272

17:53:49 **1** the proportion of asbestos?
 17:53:53 **2** MS. O'DELL: Object to the form.
 17:53:54 **3** THE WITNESS: I'm sorry, where is this
 17:53:55 **4** stated?
 17:53:56 **5 Q.** (By Mr. Chachkes) In one of the ISO
 17:53:57 **6** documents that you're referring to, does it say that
 17:54:00 **7** this method that we're talking about consistently
 17:54:04 **8** yields an overestimate of the proportion of asbestos?
 17:54:08 **9** Are you aware of that?
 17:54:09 **10 A.** I don't recall that.
 17:54:10 **11 Q.** Okay. Do you believe that this
 17:54:16 **12** methodology we're talking about consistently yields
 17:54:18 **13** an overestimate of the proportion of asbestos?
 17:54:20 **14 A.** No.
 17:54:20 **15 Q.** Did your analyst use a point counting
 17:54:45 **16** method?
 17:54:46 **17 A.** No.
 17:54:46 **18 Q.** ISO 22262-2 includes a method for point
 17:54:51 **19** counting by PLM; correct?
 17:54:53 **20 A.** It does.
 17:54:54 **21 Q.** So instead of following the point counting
 17:55:01 **22** method in ISO 22262-2, you used an estimation based
 17:55:07 **23** on eyeball?
 17:55:10 **24** MR. CIRSCH: Form.
 17:55:11 **25** THE WITNESS: Estimation-based typical PLM
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17:55:12 **1** analysis, that's also in the 22262-1. They give
 17:55:16 **2** you both, the ability to do either one.
 17:55:19 **3 Q.** (By Mr. Chachkes) I'm talking about
 17:55:21 **4** 22262-2, is there the eyeballing method in 22262-2?
 17:55:27 **5** MR. CIRSCH: Object to form.
 17:55:27 **6** THE WITNESS: We only do the section 16,
 17:55:30 **7** section 14 in the counting rules for TEM in the
 17:55:35 **8** ISO 22262-2.
 17:55:37 **9 Q.** (By Mr. Chachkes) So is it your opinion
 17:55:38 **10** that the ISO 22262-2 point counting method is not
 17:55:44 **11** required; it's just merely optional?
 17:55:48 **12 A.** 22262, if you are going to do PLM, it goes
 17:55:52 **13** back to the 1, and it provides you the ability to do
 17:55:55 **14** either/or.
 17:55:56 **15 Q.** Okay. So it's your opinion that point
 17:55:59 **16** counting in 22262-2 is optional?
 17:56:03 **17** MR. CIRSCH: Object to form.
 17:56:03 **18** THE WITNESS: You're going to have to show
 17:56:05 **19** me where the point counting is in 22262-2.
 17:56:09 **20 Q.** (By Mr. Chachkes) Okay. Sitting here
 17:56:10 **21** today, rather than burning the time on that, do you
 17:56:16 **22** have any reason to believe it's not optional, that it
 17:56:18 **23** was required, you just didn't do it?
 17:56:20 **24** MS. O'DELL: Object to the form.
 17:56:21 **25** THE WITNESS: No, I don't believe that.
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274

17:56:23 **1 Q.** (By Mr. Chachkes) Okay. Do you have any
 17:56:23 **2** reason to believe it's optional and so you had the
 17:56:28 **3** option of not going it?
 17:56:29 **4** MS. O'DELL: Object to form.
 17:56:30 **5** MR. CIRSCH: Object to form.
 17:56:30 **6** THE WITNESS: We follow the 22262-1 PLM
 17:56:34 **7** method. It provides the ability to do both
 17:56:37 **8** types of estimation. And point counting is
 17:56:41 **9** another type of estimation.
 17:56:43 **10 Q.** (By Mr. Chachkes) For those particles
 17:56:44 **11** that you determined were asbestiform in your report,
 17:56:48 **12** for each one, is it your opinion that these are
 17:56:51 **13** minerals with a fibrosity in which the fibers and
 17:56:57 **14** fibrils possess a high tensile strength and
 17:57:00 **15** flexibility?
 17:57:01 **16** MR. CIRSCH: Object to form.
 17:57:01 **17** MS. O'DELL: Would you repeat that,
 17:57:02 **18** please?
 17:57:03 **19** MR. CHACHKES: Can you read that back?
 17:57:24 **20** (The record was read by the reporter.)
 17:57:24 **21** MR. CIRSCH: Object to form.
 17:57:25 **22** THE WITNESS: Again -- I guess we could
 17:57:27 **23** rehash this -- that is a general definition.
 17:57:29 **24** The protocol does not provide you any
 17:57:31 **25** methodology to determine high tensile strength
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17:57:35 **1** or any tensile strength.
 17:57:38 **2** It does not define what high is. It does
 17:57:40 **3** not define how you determine flexibility on a
 17:57:43 **4** microscopic scale.
 17:57:45 **5** I guess that is just an opinion of
 17:57:48 **6** somebody taking a look at it. But it's not
 17:57:51 **7** required for this analysis.
 17:57:53 **8 Q.** (By Mr. Chachkes) I'm not asking a
 17:57:55 **9** question at all about what's required. I'm asking
 17:57:57 **10** about what your opinion is. Do the fibers you
 17:58:02 **11** identified as asbestiform in your report possess high
 17:58:06 **12** tensile strength and flexibility?
 17:58:08 **13** MR. CIRSCH: Object to form.
 17:58:09 **14 Q.** (By Mr. Chachkes) Did you determine that?
 17:58:10 **15 A.** You can't determine it. The protocol
 17:58:12 **16** doesn't tell you how to determine it. It doesn't
 17:58:14 **17** provide any guidance on how to determine it. It
 17:58:16 **18** doesn't tell you what, quote, high tensile strength
 17:58:20 **19** is.
 17:58:21 **20** High tensile strength to me, personally,
 17:58:21 **21** probably 100 psi. I don't think that's what they
 17:58:25 **22** mean, but at least there should be some guidance of
 17:58:28 **23** some sort to say, okay, somehow you have to put an
 17:58:30 **24** Instron inside your optical microscope and grab a
 17:58:35 **25** microscopic bundle and put it in the Instron and then
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276

17:58:37 **1** measure the tensile strength, and it has to be over
 17:58:41 **2** 5,000 psi. None of that exists.
 17:58:43 **3** A methodology is supposed to -- for a
 17:58:46 **4** person using a methodology is step A, step B, step C,
 17:58:51 **5** step D. There is no methodology for determining
 17:58:55 **6** tensile strength, much less an undefined high tensile
 17:58:58 **7** strength.
 17:58:59 **8 Q.** Is there anything in the published
 17:59:00 **9** literature that allows a scientist to determine the
 17:59:03 **10** tensile strength and flexibility of a putative
 17:59:07 **11** asbestos fiber?
 17:59:07 **12 A.** Not individual fibers, no. There's plenty
 17:59:10 **13** of literature that geologists walking around in a
 17:59:15 **14** mine can make a grab sample, usually 10 to
 17:59:18 **15** 15 centimeters long, they'll tape it to paper, it's
 17:59:21 **16** very flexible at that, and then they'll put it in an
 17:59:24 **17** Instron and pull it, and then they can determine the
 17:59:27 **18** tensile strength.
 17:59:28 **19 Q.** Have you ever heard of -- sorry.
 17:59:28 **20 A.** Go ahead. I'm sorry.
 17:59:30 **21 Q.** Did you ever hear of a PLM scientist
 17:59:33 **22** looking at a sample and pushing it down and if it
 17:59:36 **23** breaks versus whether it bends, that relates to
 17:59:40 **24** tensile strength? Have you ever heard of that?
 17:59:41 **25** MR. CIRSCH: Object to form.
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17:59:42 **1** THE WITNESS: No. There's no protocol for
 17:59:45 **2** that.
 17:59:45 **3** MR. CIRSCH: Alex, we probably should
 17:59:47 **4** break any time in the next few minutes, if we
 17:59:50 **5** can.
6 MR. CHACHKES: Yeah, we can take a break,
 18:01:21 **7** that's fine.
 18:01:21 **8** (Recess from 6:01 p.m. to 6:53 p.m.)
 19:15:25 **9** Q. (By Mr. Chachkes) Dr. Longo, your
 19:15:52 **10** analysts reported identifying cleavage fragments in
 19:15:56 **11** many of the samples by ISO PLM; correct?
 19:15:58 **12** A. Yes.
 19:15:58 **13** Q. How many anthophyllite cleavage fragments
 19:16:01 **14** did your analysts detect?
 19:16:03 **15** A. I don't recall them detecting any.
 19:16:04 **16** Q. How many tremolite cleavage fragments did
 19:16:08 **17** your analysts detect?
 19:16:08 **18** A. We just determined -- we didn't do a count
 19:16:11 **19** of how many cleavage fragments, only that they were
 19:16:13 **20** present.
 19:16:14 **21** Q. Did you produce the data regarding the
 19:16:16 **22** cleavage fragment particles in these samples?
 19:16:20 **23** A. I produced all the data we have. Some of
 19:16:22 **24** the photographs you can see some of the cleavage
 19:16:26 **25** fragments, others you can't.
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278

19:16:27 **1** Q. Did you quantify identified cleavage
 19:16:32 **2** fragments the way you quantified identified
 19:16:35 **3** asbestiform fibers and bundles?
 19:16:36 **4** A. No.
 19:16:37 **5** Q. And you don't report on cleavage fragments
 19:16:41 **6** in your report; correct? I'm sorry, strike that.
 19:16:45 **7** You don't report on the concentration of
 19:16:47 **8** cleavage fragments in your report; correct?
 19:16:49 **9** A. I do not.
 19:16:50 **10** Q. Okay. And you did not take that data?
 19:16:54 **11** A. Other than to note that they were present.
 19:16:57 **12** Q. Okay. And you cannot state to a
 19:17:00 **13** reasonable degree of scientific certainty what the
 19:17:02 **14** concentration of cleavage fragments in any of these
 19:17:04 **15** samples were; correct?
 19:17:05 **16** A. We did not quantify the numbers of
 19:17:09 **17** cleavage fragments that were observed other than that
 19:17:12 **18** they were present.
 19:17:13 **19** MR. CHACHKES: Okay. Let's look at this
 19:17:15 **20** one.
 19:17:19 **21** All right. We're going to look at a
 19:17:21 **22** sample where the analyst reported both cleavage
 19:17:24 **23** fragments and asbestos by PLM. Let's mark 24.
24 (Defendants' Exhibit 24 was marked for
 19:17:43 **25** identification.)
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19:17:43 **1** Q. (By Mr. Chachkes) So you see at the
 19:17:44 **2** bottom, this is a -- actually, what do you call this
 19:17:50 **3** count sheet here, this sheet, Exhibit 24?
 19:17:53 **4** A. It's the PLM analysis bench sheet.
 19:17:56 **5** Q. Okay. So this Exhibit 24, which is your
 19:17:58 **6** PLM analysis bench sheet for a particular sample, you
 19:18:01 **7** see at the bottom that both cleavage fragments and
 19:18:07 **8** asbestos particles were observed?
 19:18:09 **9** A. Yes.
 19:18:10 **10** Q. Okay. I see it says -- is it both
 19:18:15 **11** actinolite and tremolite cleavage fragments were
 19:18:18 **12** observed? Am I reading that right?
 19:18:19 **13** A. Yes.
 19:18:19 **14** Q. And let's go to -- and this is from your
 19:18:24 **15** report, pages 120 to 128 from your January report,
 19:18:28 **16** the analysis for bottle M68503-010-BL1; do you see
 19:18:37 **17** that?
 19:18:37 **18** A. Yes.
 19:18:38 **19** Q. Okay. So let's turn to the picture -- the
 19:18:47 **20** first picture we get to, which is I guess on page 2
 19:18:50 **21** of this document.
 19:18:51 **22** Which are cleavage fragments and which are
 19:18:53 **23** asbestiform, or can you not tell?
 19:18:56 **24** A. Well the one that we see here that's
 19:18:58 **25** measured as 69 micrometers, that is asbestiform. We
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280

19:19:03 **1** have many talc particles, and --
 19:19:06 **2** Q. How do you know which are the talc
 19:19:10 **3** particles?
 19:19:10 **4** A. I'm looking at them. Because under
 19:19:13 **5** dispersion staining they're usually anywhere from --
 19:19:17 **6** depending on the thickness of bluish to a brighter
 19:19:20 **7** yellow.
 19:19:21 **8** And potentially, one other asbestiform
 19:19:28 **9** down in the lower left-hand -- next to a fairly good
 19:19:35 **10** size talc particle.
 19:19:36 **11** Q. It looks like the top of a T --
 19:19:36 **12** A. Yes --
 19:19:37 **13** Q. -- on its side?
 19:19:39 **14** A. -- that's a good description.
 19:19:41 **15** And as for cleavage fragments -- and I
 19:19:44 **16** would have to be looking in the microscope, but I
 19:19:46 **17** would say potentially one.
 19:19:49 **18** Q. Where?
 19:19:49 **19** A. There (indicating).
 19:19:53 **20** Q. So you're pointing to it looks like a
 19:19:56 **21** yellow kernel of corn somewhere center left, and
 19:19:59 **22** there's a very small kind of orangish stain right to
 19:20:03 **23** the right of it; is that what you're looking at?
 19:20:05 **24** A. That's what I'm saying, potentially one.
 19:20:08 **25** Q. Okay. What about the next page? Do you
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19:20:14 **1** see any asbestiform particles, any cleavage
 19:20:17 **2** fragments?
 19:20:18 **3** **A.** Well, we're looking at the exact same
 19:20:25 **4** material. Now we're in perpendicular dispersion,
 19:20:29 **5** which you have this color change, so there's no new
 19:20:33 **6** information here.
 19:20:35 **7** **Q.** Okay. And so what you identified in the
 19:20:37 **8** previous page as a potential cleavage fragment, is
 19:20:40 **9** that what I see, it's kind of like center, down about
 19:20:43 **10** halfway, above what looks like a yellow delta.
 19:20:53 **11** **A.** Yes.
 19:20:57 **12** **Q.** Okay. Looking at the purple page. Tell
 19:21:15 **13** me when you're there. There's something an arrow is
 19:21:18 **14** pointing at. What's that?
 19:21:19 **15** **A.** That's the same structure we've been
 19:21:22 **16** looking at. It's at a higher magnification, 200
 19:21:25 **17** times.
18 **Q.** Okay.
 19:21:25 **19** **A.** So that's the actinolite/tremolite
 19:21:30 **20** asbestos bundle, and the resolution on the elongation
 19:21:35 **21** with the gypsum filter, if it's 530 nanometers,
 19:21:42 **22** you're not resolving any of these very small
 19:21:45 **23** particulates.
 19:21:45 **24** **Q.** So you called it a bundle. Where are the
 19:21:47 **25** fibers?
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19:23:39 **1** 1.660 are required at intervals of 0005.
 19:23:43 **2** Do you see that?
 19:23:45 **3** **A.** Yes.
 19:23:50 **4** **Q.** Okay. Is it what's in 7.1.4.1 that led
 19:23:57 **5** you to 1.605 as the RI liquid?
 19:24:01 **6** **A.** Yes and no. Yes, it states that 1.605.
 19:24:07 **7** But, no, it's the common refractive indices liquid
 19:24:11 **8** that we use that's in the R-93, so it's one of the
 19:24:14 **9** common refractive indices liquids for this type of
 19:24:17 **10** analysis.
 19:24:18 **11** **Q.** Okay. Did you use liquids at intervals of
 19:24:23 **12** 005?
 19:24:24 **13** **A.** No. We just use 1.605.
 19:24:32 **14** **Q.** Can RI liquid 1.605 determine whether a
 19:24:38 **15** particle is anthophyllite?
 19:24:39 **16** **A.** Yes.
 19:24:40 **17** **Q.** Can it be used to determine whether a
 19:24:43 **18** particle is talc?
 19:24:44 **19** **A.** Yes. You can determine the difference
 19:24:49 **20** between the talc and the anthophyllite and the
 19:24:53 **21** tremolite in 1.605.
 19:24:55 **22** You can use 1.55 if you want further
 19:24:59 **23** identification.
 19:25:00 **24** **Q.** What color would anthophyllite appear as
 19:25:03 **25** using the RI liquid 1.605?
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282
 19:21:48 **1** **A.** Well, you can't see it there, but you can
 19:21:51 **2** see the fibers in the dispersion staining on both the
 19:22:03 **3** perpendicular and the parallel orientations.
 19:22:06 **4** **Q.** Those are the first two pages we looked
 19:22:09 **5** at?
 19:22:09 **6** **A.** Yes.
 19:22:09 **7** **Q.** Okay. Explain how you selected the
 19:22:17 **8** refractive index liquid when you conducted -- when
 19:22:21 **9** you're conducting analysis.
 19:22:23 **10** **A.** The 1.605 is a common refractive indices
 19:22:27 **11** liquid that you can use. You can use 1.605, you can
 19:22:31 **12** use a 1.63 or a 1.64; but that's, in my opinion, the
 19:22:38 **13** most common refractive indices liquid for amphiboles.
 19:22:43 **14** **Q.** When you call it the most common, is
 19:22:46 **15** that -- can I find that in the peer-reviewed
 19:22:48 **16** literature?
 19:22:48 **17** **A.** Let's see. Would it say the most common?
 19:22:58 **18** I don't know. But -- you know, I won't waste time,
 19:23:02 **19** but in the one they'll talk about the different
 19:23:09 **20** refractive indices liquids. You can use others.
 19:23:11 **21** **Q.** And you're looking at Exhibit 4, which is
 19:23:12 **22** the 22262 part 1?
 19:23:14 **23** **A.** Yes.
 19:23:14 **24** **Q.** I'm looking at page 15 where it says,
 19:23:31 **25** under 7.1.4.1, RI liquids in the range of 1.605 to
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284
 19:25:06 **1** **A.** Under dispersion staining it's typically a
 19:25:10 **2** lightish gold versus a darker, yellowish gold on the
 19:25:17 **3** tremolite, as I recall correctly.
 19:25:19 **4** **Q.** What about talc, what color does that show
 19:25:22 **5** up?
 19:25:22 **6** **A.** Anywhere from very bright, like as can be
 19:25:30 **7** seen in this, to, depending on the thickness, to a
 19:25:34 **8** bluish kind of grayish color.
 19:25:37 **9** **Q.** Okay. If the talc folds up on itself,
 19:25:40 **10** will it appear as a different color, that part that's
 19:25:43 **11** folded up on itself?
 19:25:44 **12** **A.** We've never seen that, but I don't believe
 19:25:46 **13** so, no.
 19:25:47 **14** **Q.** Okay. Does the peer-reviewed literature
 19:25:53 **15** tell you what the colors will be for RI 1.605 for
 19:25:57 **16** anthophyllite talc and tremolite?
 19:25:58 **17** **A.** Yes. Depending on what type of microscope
 19:26:04 **18** you have, if it's got an angular condenser lens and
 19:26:09 **19** what the temperature is, you can go through the
 19:26:11 **20** wavelengths of light and colors and pick out the
 19:26:15 **21** refractive indices for these particular types of
 19:26:18 **22** amphiboles.
 19:26:18 **23** **Q.** Okay. Would you expect sometimes using RI
 19:26:30 **24** liquid 1.605 for anthophyllite to turn up as a color
 19:26:32 **25** that's completely different from lightish gold?
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19:26:35 **1** **A.** Sometimes that happens, depending on the
 19:26:39 **2** thickness of the bundle, because of the way it's
 19:26:43 **3** transmitted through the light, so then you have to
 19:26:46 **4** look more around the edges of the bundle to get the
 19:26:48 **5** appropriate colors.
 19:26:49 **6** But I've seen it go from everything from a
 19:26:51 **7** goldish yellow to a reddish to a blue when you get
 19:26:54 **8** these really thick, multifiber bundles.
 19:26:57 **9** **Q.** And where can I find in the peer-reviewed
 19:27:01 **10** literature this range of colors and what they
 19:27:03 **11** correspond to under RI 1.605?
 19:27:06 **12** **A.** The Su article. Or any article that tells
 19:27:12 **13** you how to do polarized light microscopy. You can go
 19:27:16 **14** back to the early McCrone particle analysis.
 19:27:31 **15** **MR. CHACHKES:** Okay. Let's mark as the
 19:27:32 **16** next Exhibit 25.
 19:27:59 **17** (Defendants' Exhibit 25 was marked for
 19:27:59 **18** identification.)
 19:27:59 **19** **Q.** (By Mr. Chachkes) Okay. In your expert
 19:28:03 **20** opinion, is -- this is a talc particle and an
 19:28:06 **21** anthophyllite particle?
 19:28:08 **22** **A.** Well, you have one -- two talc particles
 19:28:11 **23** that you can see for sure. This is out of focus.
 19:28:15 **24** And then you have the anthophyllite asbestos bundle.
 19:28:20 **25** **Q.** So the -- I'm focusing on the talc
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286

19:28:25 **1** particle in the center. It's your opinion that what
 19:28:28 **2** happened is there's an anthophyllite fiber that has
 19:28:32 **3** the exact length and is perfectly flush with the talc
 19:28:37 **4** particle that happened to match perfectly that edge?
 19:28:41 **5** **MR. CIRSCH:** Object to form.
 19:28:42 **6** **THE WITNESS:** Yes.
 19:28:48 **7** **Q.** (By Mr. Chachkes) Okay. And is there a
 19:28:49 **8** chance that that actually is just the rolled up edge
 19:28:51 **9** of a talc?
 19:28:52 **10** **A.** No.
 19:28:52 **11** **Q.** And why do you say no?
 19:28:53 **12** **A.** Because you have some rolling here a
 19:28:56 **13** little bit. But it doesn't matter if it rolls up;
 19:29:00 **14** you're not going to get the same color like that.
 19:29:02 **15** **Q.** And you said that you can get a range of
 19:29:10 **16** colors for anthophyllite, including red and blue.
 19:29:13 **17** Does the same apply for talc?
 19:29:15 **18** **A.** No, that's not what I said. I said if you
 19:29:18 **19** have a very thick bundle, you're going to have the
 19:29:20 **20** range of colors. And it happens with the
 19:29:22 **21** actinolite/tremolite also, but you do get the primary
 19:29:25 **22** colors. Once it gets to a certain thickness,
 19:29:29 **23** transmitting through the light is different. So we
 19:29:33 **24** have some examples of those somewhere where you can
 19:29:35 **25** get the appropriate colors. That's not rolled up
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19:29:37 **1** talc.
 19:29:38 **2** **Q.** Okay. And do you have a reference in
 19:29:44 **3** mind, peer-reviewed reference, that shows you what a
 19:29:47 **4** rolled up talc looks like in a PLM?
 19:29:49 **5** **A.** I've never seen a peer-reviewed reference
 19:29:53 **6** that shows what that looks like. You know, I'll
 19:29:56 **7** quote from Walter McCrone himself that he's never
 19:30:01 **8** seen a rolled up talc particle.
 19:30:03 **9** **Q.** And you're citing what paper?
 19:30:05 **10** **A.** It's in my report, the reference to it,
 19:30:09 **11** where he says exactly that he had -- for whatever
 19:30:12 **12** reason, that I have never seen a rolled up talc
 19:30:15 **13** particle.
 19:30:16 **14** **Q.** Do you know what refractive index liquid
 19:30:20 **15** it takes to make the distinction between
 19:30:22 **16** anthophyllite and talc?
 19:30:24 **17** **A.** You can use -- this is in 1.605.
 19:30:30 **18** **Q.** Okay. Go ahead.
 19:30:32 **19** **A.** You can use that. But if you're going to
 19:30:35 **20** look just at the talc alone, you use the 1.5 fiber
 19:30:40 **21** refractive indices liquid.
 19:30:43 **22** **Q.** Okay.
 19:30:43 **23** **A.** But you can't kind of mix and match here.
 19:30:47 **24** If you're going to -- and we do that sometimes when
 19:30:48 **25** there's no -- if there's no asbestiform bundles in
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288

19:30:52 **1** it, you'll see in some of our count sheets in there
 19:30:56 **2** that it will have 1.55.
 19:30:57 **3** **Q.** But it is your opinion that you can use
 19:31:00 **4** 1.605 to distinguish anthophyllite and talc?
 19:31:04 **5** **A.** Correct.
 19:31:05 **6** **Q.** Okay. Is there additional data concerning
 19:31:22 **7** the samples upon which you reported ISO PLM, as in a
 19:31:26 **8** file somewhere in your laboratory but not printed out
 19:31:28 **9** or produced?
 19:31:29 **10** **A.** I don't believe so. I tried to produce
 19:31:31 **11** everything that we took.
 19:31:32 **12** **Q.** Okay. Was there any data generated in
 19:31:34 **13** connection with ISO PLM analysis in this case that
 19:31:36 **14** was either thrown away or deleted?
 19:31:39 **15** **A.** No.
 19:31:39 **16** **Q.** What are the differences, if any, between
 19:31:45 **17** how your analysts employed the Blount method and how
 19:31:50 **18** it is actually written in the 1991 article?
 19:31:54 **19** **A.** The only difference is it's unable to
 19:31:59 **20** really interpret how she counts the particulates or
 19:32:03 **21** if she is counting the fibers per milligram of
 19:32:06 **22** material. We've looked at that.
 19:32:09 **23** So she gives it in numbers of fibers or
 19:32:12 **24** numbers of bundles per milligram, a number count,
 19:32:15 **25** which is the same thing we do, of course, in the TEM,
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19:32:19 **1** where we just follow the procedure here for the ISO
 19:32:21 **2** 22262-1 for an estimated weight percent.
 19:32:26 **3 Q.** Okay. But otherwise, you followed the
 19:32:28 **4** 1991 Blount method to the letter?
 19:32:31 **5 A.** Pretty much.
 19:32:32 **6 Q.** Following the Blount concentration, your
 19:32:37 **7** analysts conducted PLM pursuant to ISO 22262-1 PLM
 19:32:41 **8** method; right?
 19:32:43 **9 A.** That's correct.
 19:32:43 **10 Q.** Blount did not use that 22262-1 PLM;
 19:32:49 **11** correct?
 19:32:49 **12 A.** No, she used a fiber count method so that
 19:32:53 **13** if you look at her data, I think she has anywhere for
 19:32:57 **14** that sample I, which is the Johnson & Johnson Vermont
 19:33:02 **15** sample, 1989-1990, she finds in the range of about
 19:33:05 **16** 100 to almost 235 milligrams -- fiber/bundles per
 19:33:11 **17** milligram. So if you multiply that by 1,000 she's
 19:33:14 **18** finding the ranges of concentrations at the higher
 19:33:18 **19** end that we are.
 19:33:18 **20 Q.** And --
 19:33:20 **21 A.** So we followed the counting rules for
 19:33:23 **22** estimating weight percent. She did what we do into
 19:33:27 **23** the TEM and did a number count per milligram of talc.
 19:33:32 **24 Q.** Dr. Blount's paper includes a particle
 19:33:35 **25** size distribution analysis; correct?
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19:34:47 **1 Q.** Dr. Blount included particles in her
 19:34:50 **2** particle size distribution that were below the 3-to-1
 19:34:53 **3** aspect ratio; correct?
 19:34:54 **4 A.** That's correct.
 19:34:54 **5 Q.** Do you have any other opinions regarding
 19:34:57 **6** Dr. Blount's 1990 or 1991 papers in this case beyond
 19:35:01 **7** those expressed in your report and that we just
 19:35:03 **8** discussed?
 19:35:03 **9 A.** No.
 19:35:04 **10 Q.** Is additional data concerning the samples
 19:35:08 **11** upon which you reported for Blount PLM in a file
 19:35:11 **12** somewhere in your laboratory but not printed out and
 19:35:13 **13** produced?
 19:35:14 **14 A.** No. We've produced everything that we
 19:35:17 **15** generated for the MDL.
 19:35:19 **16 Q.** Okay. And all data and material
 19:35:22 **17** information generated about your work for the Blount
 19:35:25 **18** PLM was produced?
 19:35:27 **19** MS. O'DELL: Object to the form.
 19:35:28 **20** THE WITNESS: As far as I know, everything
 19:35:29 **21** was produced for all the data we collected for
 19:35:32 **22** the MDL samples.
 19:35:34 **23 Q.** (By Mr. Chachkes) Okay. And I think I
 19:35:35 **24** already know the answer, but I'm going to ask it.
 19:35:37 **25** And any of the data you generated for your Blount PLM
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290

19:33:39 **1 A.** Particle size distribution analysis for
 19:33:41 **2** the length and size of the asbestos -- tremolite
 19:33:45 **3** asbestos she was finding in the PLM, yes.
 19:33:47 **4 Q.** And she plotted the aspect ratios of the
 19:33:50 **5** particles she viewed by PLM?
 19:33:53 **6 A.** The fibrous asbestos, yes, she did.
 19:33:55 **7 Q.** She did this because asbestos has a
 19:33:57 **8** characteristic distribution?
 19:34:00 **9 A.** Milled tremolite has a characteristic
 19:34:04 **10** distribution, yes.
 19:34:04 **11 Q.** Okay. And the nonasbestiform version of
 19:34:09 **12** the same amphibole has a different characteristic
 19:34:13 **13** distribution?
 19:34:13 **14 A.** Yes, it does.
 19:34:14 **15 Q.** And you did not generate a particle size
 19:34:17 **16** distribution chart like the one in Blount's paper --
 19:34:22 **17** the ones in Blount's paper in your report?
 19:34:23 **18 A.** Not for the MDL samples, no. We did for
 19:34:26 **19** the original analysis so that we could compare it to
 19:34:29 **20** the NIST tremolite asbestos standard, to Blount's
 19:34:34 **21** particle size, as well as the Campbell particle size.
 19:34:39 **22 Q.** You included a table with average particle
 19:34:43 **23** size that your analysts recorded by TEM, however,
 19:34:46 **24** though; right?
 19:34:46 **25 A.** Correct.
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292

19:35:40 **1** analysis, was any of it thrown away or deleted?
 19:35:43 **2 A.** No. We have many negatives, we have many
 19:35:47 **3** positives, so we just reported what we saw.
 19:35:50 **4 Q.** In your report at page 8 you state that
 19:35:53 **5** you found fibrous talc in 98 percent of the Italian
 19:35:56 **6** and Vermont talc samples by ISO 22262-1; correct?
 19:36:00 **7 A.** That's correct.
 19:36:00 **8 Q.** What's your definition of fibrous talc?
 19:36:03 **9 A.** Has greater than .5 micrometers in length,
 19:36:08 **10** has parallel sides, and it has at least 5-to-1 aspect
 19:36:12 **11** ratio.
 19:36:12 **12 Q.** Is there a scientific consensus that there
 19:36:17 **13** is such a thing as fibrous talc?
 19:36:21 **14** MR. CIRSCH: Object to form.
 19:36:22 **15** THE WITNESS: I don't believe so.
 19:36:22 **16 Q.** (By Mr. Chachkes) Are you aware of any
 19:36:23 **17** epidemiologist or doctor who has studied the health
 19:36:26 **18** effects of fibrous talc?
 19:36:28 **19 A.** I don't testify about health effects of
 19:36:30 **20** fibrous talc or regulated asbestos, so I don't have
 19:36:33 **21** any opinions about that one way or the other if
 19:36:35 **22** anybody has studied it. That's not my area.
 19:36:37 **23 Q.** You were disclosed for health and
 19:36:39 **24** regulatory definitions of talc; correct?
 19:36:41 **25** MS. O'DELL: Object to the form.
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19:36:42 **1** THE WITNESS: I don't believe so.
 19:36:43 **2** **Q.** (By Mr. Chachkes) Okay. And you're not
 19:36:45 **3** here to testify about health and regulatory
 19:36:48 **4** definitions of talc?
 19:36:49 **5** **A.** I'm not testifying that fibrous talc has
 19:36:52 **6** any impact on the human body whatsoever.
 19:36:55 **7** **Q.** Are you aware of any regulatory
 19:36:57 **8** definitions of fibrous talc?
 19:37:00 **9** **A.** Fibrous talc for the protocols that we
 19:37:05 **10** follow is not deemed a regulated asbestos fiber. We
 19:37:10 **11** just follow the same counting rules that we do for
 19:37:13 **12** asbestos to characterize what we're looking at.
 19:37:18 **13** **Q.** So ISO 22262, parts 1 through 3, they
 19:37:22 **14** don't define fibrous talc; correct?
 19:37:25 **15** **A.** They define anything that is an elongated
 19:37:28 **16** structure and fibrous that if you care to write down
 19:37:33 **17** your findings you could put it in.
 19:37:35 **18** **Q.** So they define fibrous talc in that way?
 19:37:37 **19** **A.** They define elongated fiber materials that
 19:37:42 **20** you're going to -- if you wish to count into the TEM,
 19:37:46 **21** any elongated structure.
 19:37:48 **22** **Q.** Okay. And so it's your testimony that ISO
 19:37:55 **23** 22262 was meant as a method to count fibrous talc?
 19:38:01 **24** MR. CIRSCH: Object to form.
 19:38:01 **25** THE WITNESS: I didn't say that.
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294

19:38:02 **1** **Q.** (By Mr. Chachkes) Is it a method to count
 19:38:03 **2** fibrous talc? Is it meant as such as method?
 19:38:06 **3** MR. CIRSCH: Object to form.
 19:38:07 **4** THE WITNESS: I don't know what it was
 19:38:08 **5** meant for, but it gives you the tools if you
 19:38:10 **6** wish to do that. They don't restrict what you
 19:38:13 **7** can or can't count. Nowhere in the method does
 19:38:16 **8** it say don't count the fibrous talc.
 19:38:19 **9** **Q.** (By Mr. Chachkes) And can you identify
 19:38:26 **10** anywhere where there's a method and a peer-reviewed
 19:38:30 **11** literature or peer-reviewed publication where it
 19:38:34 **12** expressly refers to fibrous talc and a method to
 19:38:36 **13** count fibrous talc?
 19:38:38 **14** **A.** All the methods allow you to do that.
 19:38:42 **15** **Q.** Yeah, I'm not asking about what methods
 19:38:44 **16** allow you --
 19:38:45 **17** **A.** You interrupted me.
 19:38:46 **18** **Q.** Okay.
 19:38:47 **19** **A.** It's late.
 19:38:47 **20** All the methods give you the tools to do
 19:38:49 **21** that if you wish. No method out there says do not
 19:38:52 **22** count this particular type of structure. Just like
 19:38:55 **23** in Blount, where she counted the particulates and
 19:38:58 **24** tried to get a ratio of how many amphibole asbestos
 19:39:01 **25** was for every number of particulates. The
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19:39:04 **1** information doesn't change because somebody doesn't
 19:39:07 **2** say one way or the other if you should do it.
 19:39:10 **3** **Q.** It's a simple question, if you would
 19:39:12 **4** answer the question I'm actually asking, which is is
 19:39:15 **5** there a published or peer-reviewed document that you
 19:39:17 **6** can point me to that expressly talks about a way to
 19:39:21 **7** count fibrous talc?
 19:39:22 **8** MR. CIRSCH: Object to form.
 19:39:23 **9** **Q.** (By Mr. Chachkes) Putting aside whether
 19:39:25 **10** you can use some other method that doesn't say the
 19:39:28 **11** phrase fibrous talc -- to count fibrous talc, is
 19:39:30 **12** there something that expressly refers to fibrous talc
 19:39:32 **13** and a method to count it?
 19:39:34 **14** MR. CIRSCH: Object to form.
 19:39:35 **15** THE WITNESS: I'd have to go back and
 19:39:37 **16** relook. None of the methods say do not count
 19:39:39 **17** fibrous talc.
 19:39:41 **18** **Q.** (By Mr. Chachkes) Sitting here -- okay.
 19:39:42 **19** MR. CIRSCH: Let him finish.
 19:39:44 **20** THE WITNESS: None of the methods say do
 19:39:46 **21** not count fibrous talc.
 19:39:47 **22** **Q.** (By Mr. Chachkes) Yes, you said that many
 19:39:49 **23** times. I'm --
 19:39:49 **24** MR. CIRSCH: You're interrupting him
 19:39:51 **25** again. Stop. Stop.
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296

19:39:52 **1** THE WITNESS: Let me start over. I lost
 19:39:54 **2** my train of thought.
 19:39:55 **3** None of the methods say do not count
 19:39:57 **4** fibrous talc. The 7402 -- NIOSH 7402
 19:40:01 **5** specifically says if it's fibrous talc, count
 19:40:05 **6** it, in TEM. That's one. And I'll have to --
 19:40:08 **7** **Q.** (By Mr. Chachkes) So --
 19:40:10 **8** MR. CIRSCH: You keep interrupting him.
 19:40:12 **9** MR. CHACHKES: I'm asking just to save --
 19:40:12 **10** MS. O'DELL: No, you're interrupting him.
 19:40:14 **11** MR. CIRSCH: You keep doing it, Alex.
 19:40:16 **12** THE WITNESS: So that's one.
 19:40:17 **13** **Q.** (By Mr. Chachkes) NIOSH?
 19:40:18 **14** **A.** NIOSH 7402 TEM method, where you're
 19:40:20 **15** determining the percentage of asbestos -- regulated
 19:40:24 **16** asbestos defined by the counting rules versus other
 19:40:27 **17** things, and it actually has talc in there.
 19:40:30 **18** **Q.** Okay. So in there I can look, and it will
 19:40:32 **19** say here's how you count fibrous talc?
 19:40:35 **20** **A.** I don't think they put it that simply.
 19:40:38 **21** But if you have knowledge about the protocols and
 19:40:41 **22** read through it, you would understand.
 19:40:43 **23** **Q.** Okay. Putting aside whether there are
 19:40:46 **24** documents that don't expressly say you can't use them
 19:40:50 **25** for this purpose, is there a document that says this
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19:40:53 **1** is how you count fibrous talc, using the phrase
19:40:56 **2** fibrous talc?
19:40:57 **3** **A.** They all say it because they say this is
19:40:59 **4** how you define a fiber. Then how you identify what
19:41:03 **5** that fiber is, you can make that decision. But every
19:41:06 **6** one of these TEM protocols say this is the definition
19:41:09 **7** of a fiber.
19:41:10 **8** **Q.** Putting aside protocols and publications
19:41:16 **9** that talk about fibers generally, and putting aside
19:41:18 **10** your continued insistence on talking about things
19:41:21 **11** that don't say something, is there something that
19:41:23 **12** actually says this is how you count fibrous talc,
19:41:27 **13** using the phrase fibrous talc?
19:41:29 **14** **MR. CIRSCH:** Object to form.
19:41:33 **15** **THE WITNESS:** It is my opinion that they
19:41:34 **16** all give you the tools to count fibrous talc.
19:41:37 **17** Do they actually say what every mineral --
19:41:39 **18** elongated particle mineral is that you should or
19:41:42 **19** should not count? I'd have to go back and
19:41:44 **20** check.
19:41:45 **21** I'm going to give you the same answer for
19:41:47 **22** the same question. They all provide you the
19:41:49 **23** tools or the counting procedures to count
19:41:53 **24** whatever elongated particle you want and
19:41:56 **25** identify it.

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19:42:26 **1** **MS. O'DELL:** CMO 11, as you know, Alex,
19:42:32 **2** requires you to --
19:42:34 **3** **MR. CHACHKES:** I'm sorry, are you
19:42:35 **4** testifying about a document?
19:42:36 **5** **MS. O'DELL:** I'm telling you what the
19:42:37 **6** order says.
7 **MR. CHACHKES:** Oh, okay. I'm sorry.
19:42:38 **8** **MS. O'DELL:** You may not be aware of the
19:42:39 **9** order since you've not appeared in the MDL, but
19:42:42 **10** it says to --
11 **MR. CHACHKES:** Actually --
19:42:42 **12** **MS. O'DELL:** -- treat the witness with
19:42:44 **13** civility and respect.
19:42:46 **14** He's answered your question, and you
19:42:47 **15** should stop badgering him.
19:42:49 **16** **MR. CHACHKES:** Okay. Your objection's
19:42:51 **17** been made.
19:42:52 **18** **Q.** (By Mr. Chachkes) Are fibrous talc and
19:42:53 **19** asbestiform talc different?
19:42:55 **20** **A.** No.
19:42:59 **21** **Q.** In your report at page 30 you write that
19:43:03 **22** others have reported that fibrous talc is a
19:43:06 **23** geological metamorphic transformation of
19:43:09 **24** anthophyllite to fibrous talc?
19:43:11 **25** **A.** Yes.

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298
19:41:56 **1** **Q.** (By Mr. Chachkes) So sitting here today,
19:41:57 **2** you can't tell me a counting protocol that expressly
19:42:01 **3** mentions this is how you count, mentioning the phrase
19:42:04 **4** fibrous talc?
19:42:06 **5** **MR. CIRSCH:** Object to form. He's
19:42:07 **6** answered the question. I instruct him not to
19:42:09 **7** answer any further.
19:42:11 **8** **MR. CHACHKES:** You're instructing him not
19:42:12 **9** to answer?
19:42:13 **10** **MR. CIRSCH:** He answered the question. I
19:42:13 **11** mean, you're badgering him now with the same
19:42:15 **12** question over and over again.
13 **MR. CHACHKES:** I'm asking a different
19:42:17 **14** question.
19:42:17 **15** **MS. O'DELL:** Alex, I'm sure you're
19:42:19 **16** aware --
19:42:20 **17** **MR. CHACHKES:** Who's objecting here?
19:42:21 **18** **MS. O'DELL:** I'm objecting right here, and
19 I'm sure you're aware --
19:42:22 **20** **MR. CHACHKES:** Okay. Can we just keep it
19:42:24 **21** to one person? It's a much more controlled
19:42:25 **22** environment when we do that.
19:42:25 **23** **MS. O'DELL:** Let me -- don't interrupt me.
24 **MR. CHACHKES:** Okay. Wait. Which Lee is
19:42:26 **25** objecting?

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300
19:43:12 **1** **Q.** Okay. And then you cite a couple of
19:43:15 **2** things. There's an MVA report -- two MVA reports,
19:43:19 **3** right? You can go to page 30, footnotes 42, 43.
19:43:28 **4** **A.** It should be reference 30, Virta, The
19:43:44 **5** Phase Relationship of Talc and Amphiboles in a
19:43:47 **6** Fibrous Talc Sample, Bureau of Mines report is one.
19:43:50 **7** Veblen, 29, New Bio -- it's late -- I
19:43:56 **8** can't even pronounce it -- Biopyriboles, Chester,
19:44:00 **9** Vermont, talks about the polymorph transformation.
19:44:06 **10** That's how fibrous talc is generated --
11 **Q.** Okay.
19:44:08 **12** **A.** -- is the -- during way back when, during
19:44:11 **13** pressure and temperature, when you had the liquid
19:44:12 **14** rock and -- depending on the minerals. Those are two
19:44:16 **15** references and there's others. I didn't put all of
19:44:19 **16** them in there.
19:44:19 **17** **Q.** Okay. Let's talk about two references you
19:44:21 **18** did put in. You put in two references to MVA
19:44:24 **19** reports, footnotes 42 and 43; correct?
19:44:55 **20** Am I correct that 42 and 43 --
19:44:58 **21** **A.** You are correct.
19:44:58 **22** **Q.** Okay. And those are reports prepared for
19:45:01 **23** plaintiffs in talc litigation?
19:45:05 **24** **MR. CIRSCH:** Object to form.
19:45:06 **25** **THE WITNESS:** That's my understanding.

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19:45:06 **1** Q. (By Mr. Chachkes) Okay. In your footnote
 19:45:09 **2** 42, you have the date of the MVA report as 2018, but
 19:45:14 **3** it was actually from 2017; correct?
 19:45:18 **4** A. That's correct.
 19:45:18 **5** Q. These MVA reports you cite in footnotes 42
 19:45:22 **6** and 43, those were not published; correct?
 19:45:24 **7** A. No, sir.
 19:45:25 **8** Q. And they're not peer-reviewed?
 19:45:27 **9** A. As far as I know, they haven't been
 19:45:30 **10** published.
 19:45:30 **11** Q. And they're not peer-reviewed, are they?
 19:45:33 **12** A. Well, if you're talking about
 19:45:34 **13** peer-reviewed in a publication, no.
 19:45:36 **14** Q. Okay. Is there another form of peer
 19:45:41 **15** review you're aware of?
 19:45:42 **16** A. Well, any time anybody looks over a report
 19:45:46 **17** and writes comments about it, it's peer-reviewed.
 19:45:49 **18** Q. So would you call your expert report in
 19:45:51 **19** this case peer-reviewed?
 19:45:53 **20** A. No, sir.
 19:45:55 **21** Q. Didn't Rigler look over it?
 19:45:58 **22** A. I'm talking about peer review where people
 19:46:00 **23** are looking for the scientific validity of it. It's
 19:46:05 **24** not -- as far as I know, the MVA talc analysis has
 19:46:09 **25** not been published.
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302
 19:46:10 **1** Q. Okay. And as far as you know, you don't
 19:46:13 **2** have any information that it's been peer-reviewed?
 19:46:15 **3** MR. CIRSCH: Object to form.
 19:46:16 **4** THE WITNESS: You know, I'll give you
 19:46:17 **5** that. That's correct.
 19:46:17 **6** Q. (By Mr. Chachkes) What is MVA? What does
 19:46:21 **7** it stand for?
 19:46:22 **8** A. Millette, Vander Wood & Associates.
 19:46:24 **9** Q. And both of these reports were authored by
 19:46:27 **10** Dr. Steve Compton?
 19:46:28 **11** A. Yes, sir.
 19:46:28 **12** Q. And you've testified in cases with
 19:46:30 **13** Dr. Compton before; correct?
 19:46:31 **14** A. I understand he's been in the same cases
 19:46:33 **15** as me.
 19:46:34 **16** Q. On plaintiffs' side?
 19:46:35 **17** MR. CIRSCH: Object to form.
 19:46:36 **18** THE WITNESS: Yes, sir.
 19:46:36 **19** Q. (By Mr. Chachkes) Okay. He's also an
 19:46:38 **20** expert for plaintiffs' attorneys in asbestos
 19:46:40 **21** litigation?
 19:46:41 **22** A. He has.
 19:46:41 **23** Q. Describe how your analysts utilized
 19:46:49 **24** process blanks in their analysis.
 19:46:51 **25** A. Every set of samples that are prepared, a
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19:46:56 **1** process blank is prepared along with it so that
 19:46:59 **2** everything is done exactly the same except no talc.
 19:47:03 **3** And then those samples are run through the whole
 19:47:07 **4** preparation process, and then they are analyzed in
 19:47:09 **5** the same manner as the talc samples.
 19:47:13 **6** Q. Do your analysts run a process blank with
 19:47:16 **7** every single individual sample?
 19:47:17 **8** A. No. Every set of samples that are all
 19:47:20 **9** prepared at the same time.
 19:47:21 **10** Q. Okay. And so for the MDL samples, what
 19:47:24 **11** would constitute a set in that context?
 19:47:28 **12** A. Let me look, because Rigler can talk about
 19:47:48 **13** it more tomorrow.
 19:48:02 **14** So we have a number of blanks, and
 19:48:06 **15** typically we have a chart that shows which process
 19:48:12 **16** blanks go to which set of samples.
 19:48:22 **17** I'll see if Rigler can bring that
 19:48:23 **18** tomorrow.
 19:48:30 **19** I don't have that information. Typically
 19:48:32 **20** we give that.
 19:48:32 **21** Q. Why do you say Rigler can bring it
 19:48:36 **22** tomorrow? Was he involved in that process?
 19:48:38 **23** A. Well, he was involved putting this report
 19:48:40 **24** together. And since he's coming tomorrow, maybe he
 19:48:43 **25** can get in early enough to say which set of samples
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304
 19:48:46 **1** were analyzed for each process blank.
 19:48:49 **2** Q. Sitting here today, even with the report
 19:48:51 **3** before you, you can't tell me that?
 19:48:53 **4** A. No, I don't see the chart that we have
 19:49:01 **5** prepared in the past.
 19:49:03 **6** Q. Do your analysts run a process blank with
 19:49:06 **7** every sample analyzed by PLM?
 19:49:08 **8** A. Well, you don't have anything that you're
 19:49:12 **9** generating. A process blank would literally be
 19:49:17 **10** putting the glass slide on the polarized light
 19:49:20 **11** microscope and looking at it because you're not
 19:49:20 **12** filtering anything, you're not using reagents, so
 19:49:24 **13** there's no such thing as a process blank in polarized
 19:49:27 **14** light microscopy.
 19:49:27 **15** Q. Okay. Does the ISO method provide a
 19:49:35 **16** process blank protocol?
 19:49:38 **17** A. I don't think so.
 19:49:39 **18** Q. Do you follow a process blank procedure
 19:49:42 **19** pursuant to your lab's standard protocols?
 19:49:44 **20** A. Yes.
 19:49:44 **21** Q. Is that written down somewhere?
 19:49:48 **22** A. I believe so.
 19:49:49 **23** Q. All right. We would request that be
 19:49:52 **24** produced.
 19:49:52 **25** Turning back to your TEM process blanks,
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19:49:55 **1** in your January 2019 report you write that, The
 19:49:58 **2** process laboratory blanks were prepared in the exact
 19:50:02 **3** manner as the talc samples but without any talc
 19:50:04 **4** material.
 19:50:05 **5** Does that sound familiar?
 19:50:06 **6** **A.** It does.
 19:50:06 **7** **Q.** Okay.
 19:50:07 **8** **A.** I wrote it.
 19:50:08 **9** **Q.** Was the first step in your process blank
 19:50:10 **10** protocol centrifuging a centrifuge tube with just
 19:50:15 **11** heavy liquid and no talc in it?
 19:50:17 **12** **A.** Correct.
 19:50:17 **13** **Q.** The first step of your process blank
 19:50:19 **14** protocol test tests both -- does it test both the
 19:50:25 **15** centrifuge tube and the heavy liquid for
 19:50:27 **16** contamination?
 19:50:28 **17** **A.** Well, since it's in the centrifuge tube,
 19:50:31 **18** whatever it's touched would be -- you would be
 19:50:33 **19** measuring that potential for contamination.
 19:50:36 **20** **Q.** It follows that your process blank
 19:50:39 **21** protocol did not include the portion of your method
 19:50:41 **22** before centrifugation where you transferred the
 19:50:44 **23** samples to a balance to be weighed?
 19:50:46 **24** **A.** Since we're putting no talc in it, that's
 19:50:49 **25** correct.
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19:52:19 **1** tube is cut with a guillotine. The centrifuge tube
 19:52:24 **2** is cut with a guillotine. There's no scraping for
 19:52:26 **3** the TEM.
 19:52:27 **4** **Q.** When you ran your process blanks, the
 19:52:30 **5** process did not involve taking material out of the
 19:52:33 **6** MCT tubes; right?
 19:52:35 **7** **A.** Sure, it did. It's the same way we take
 19:52:38 **8** the material out when we do the TEM analysis for the
 19:52:41 **9** process blanks. The end of the tube is cut where the
 19:52:45 **10** heavy materials -- the heavy minerals are, and then
 19:52:49 **11** it's run the exact same way.
 19:52:51 **12** **Q.** Okay. So the process blank protocol did
 19:52:52 **13** include the portion of your method where you scraped
 19:52:54 **14** the centrifuge from the tube which is --
 19:52:56 **15** **A.** It's not scraped.
 19:52:57 **16** MR. CIRSCH: Object to form.
 19:52:58 **17** THE WITNESS: There's no scraping.
 19:53:00 **18** **Q.** (By Mr. Chachkes) Okay.
 19:53:02 **19** **A.** The tip is cut with a guillotine after
 19:53:07 **20** it's been flash frozen in liquid nitrogen, and then
 19:53:08 **21** that whole tip is put into a solution and then
 19:53:09 **22** washed. There's no scraping.
 19:53:13 **23** **Q.** I'll pick a more palatable verb.
 19:53:14 **24** It follows that -- so you're saying your
 19:53:14 **25** process blank protocol included the portion of your
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19:50:49 **1** **Q.** If there was a contamination on the scale,
 19:50:52 **2** that would not be accounted for in the process blank
 19:50:54 **3** protocol; correct?
 19:51:00 **4** **A.** If. Well, there's no evidence that
 19:51:04 **5** there's an if in the scale. It's not just taken out
 19:51:09 **6** and poured onto the scale. You use weigh paper.
 19:51:13 **7** They're very careful about that.
 19:51:16 **8** But there is -- so there's no
 19:51:19 **9** contamination from the scale.
 19:51:20 **10** **Q.** But it's fair to say the process blank
 19:51:23 **11** protocol does not account for potential contamination
 19:51:25 **12** on the scale, putting aside whether there's
 19:51:27 **13** contamination or not?
 19:51:28 **14** **A.** The process blank is everything that is
 19:51:30 **15** touched: the liquid, the filtration, the filter, the
 19:51:37 **16** centrifuge tube, the additional material, the
 19:51:46 **17** apparatus that holds the filter, all that is checked.
 19:51:50 **18** **Q.** My question's about what wasn't checked.
 19:51:53 **19** Was the scale checked with the process blank
 19:51:55 **20** protocol?
 19:51:56 **21** **A.** You can't check the scale.
 19:51:57 **22** **Q.** Okay. When you ran your process blanks,
 19:52:00 **23** that process did not involve scraping samples out of
 19:52:03 **24** the MCT tubes; right?
 19:52:09 **25** **A.** Scraping samples out of the MC tube -- the
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19:53:15 **1** method where you removed from the centrifuge the
 19:53:22 **2** material with a spatula?
 19:53:27 **3** **A.** There's no removing from the centrifuge
 19:53:29 **4** tube after the spin-down with a spatula.
 19:53:34 **5** **Q.** Do you just leave the material in the
 19:53:36 **6** centrifuge?
 19:53:36 **7** **A.** We cut the tip of -- the very bottom of
 19:53:38 **8** the centrifuge tube off for TEM analysis, and then
 19:53:41 **9** that whole tip is transferred inside and outside into
 19:53:44 **10** the solution that is then going to be filtered where
 19:53:47 **11** you dilute the heavy liquid density material, as we
 19:53:50 **12** do with the TEM analysis.
 19:53:53 **13** **Q.** What percentage of MAS's work is testing
 19:53:55 **14** talc for asbestos?
 19:53:56 **15** **A.** A lot.
 19:54:02 **16** **Q.** Over 80 percent?
 19:54:03 **17** **A.** I would say right now that our revenue is
 19:54:06 **18** approximately 70 percent of talc analysis and
 19:54:09 **19** everything associated with it.
 19:54:10 **20** **Q.** Is the remaining --
 19:54:12 **21** MR. CIRSCH: I don't know if he was --
 19:54:13 **22** were you done?
 19:54:13 **23** THE WITNESS: Yeah.
 19:54:13 **24** **Q.** (By Mr. Chachkes) Is the remaining
 19:54:15 **25** percentage primarily testing asbestos?
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19:54:19 **1** **A.** Very small percentage of that. Other
19:54:24 **2** stuff that we do.
19:54:24 **3** **Q.** I'm sorry.
19:54:26 **4** **A.** Other nonlitigation projects that we do.
19:54:29 **5** **Q.** Of the 30 percent of your work that isn't
19:54:33 **6** testing talc for asbestos, is that -- what's that
19:54:37 **7** 30 percent? What are you testing for?
19:54:38 **8** **A.** Well, we do -- like today, I mean, the
19:54:46 **9** analysts have around 100 regular, everyday PLM. It's
19:54:49 **10** testing for asbestos but not litigation related.
19:54:51 **11** **Q.** Okay. My question didn't really relate to
19:54:54 **12** litigation related or not.
19:54:56 **13** Of the percentage of your work that's not
19:54:57 **14** related to testing talc for asbestos, which is in the
19:55:01 **15** range of 30 percent, is it primarily testing other
19:55:03 **16** things for asbestos? Strike that. That was a
19:55:08 **17** terrible question.
19:55:08 **18** For the 30 percent of MAS's work that is
19:55:13 **19** not testing talc for asbestos, is that remainder
19:55:17 **20** primarily testing for asbestos in other materials or
19:55:21 **21** testing asbestos itself?
19:55:22 **22** **A.** Well, let me back up. All our litigation
19:55:24 **23** work is approximately 70 percent. I would say talc
19:55:29 **24** is approximately, of that 70 percent, maybe 35,
19:55:33 **25** 40 percent.
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310

19:55:35 **1** And then the other portion of that
19:55:38 **2** 70 percent would be other litigation, other asbestos
19:55:41 **3** testing, non-talc work. And then we have 30 or
19:55:45 **4** 35 percent nonasbestos work.
19:55:48 **5** Can we go off the record for a minute?
19:55:50 **6** MR. CHACHKES: Sure.
19:55:50 **7** (Off the record.)
19:56:09 **8** (Recess from 7:56 p.m. to 7:58 p.m.)
19:58:45 **9** **Q.** (By Mr. Chachkes) What was the
19:59:03 **10** approximate dates when MAS tested the samples that
19:59:05 **11** are discussed in your January 2019 report, from
19:59:09 **12** approximately what date to what date?
19:59:11 **13** **A.** You can look through the chain of
19:59:12 **14** custodies or look through the -- but I think it was
19:59:17 **15** like November, December, October, maybe.
19:59:21 **16** And I want to circle back for a second
19:59:26 **17** just to clarify. I misspoke earlier. The 70 percent
19:59:29 **18** is not talc litigation or talc testing. It's
19:59:33 **19** approximately 30, 35 percent of what we do. The
19:59:36 **20** remaining 30 percent is nonlitigation work. So I
19:59:41 **21** know I misspoke earlier.
19:59:42 **22** **Q.** Okay. Just to make sure the record's
19:59:46 **23** clear, so you're saying about 70 percent of your work
19:59:48 **24** is litigation related, about 30 is not?
19:59:50 **25** **A.** Correct.
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19:59:51 **1** **Q.** Okay. And of the 70 percent, roughly half
19:59:54 **2** of that is talc related, the other half is roughly
19:59:57 **3** asbestos litigation related?
19:59:59 **4** **A.** Correct.
19:59:59 **5** **Q.** Okay. And of the 30 percent that's not
20:00:02 **6** litigation related, what percentage of that is
20:00:06 **7** related to testing for asbestos in any context?
20:00:09 **8** **A.** Well, that would be encompassed in the
20:00:11 **9** 70 percent. So I haven't broken that out, but the
20:00:15 **10** other 30 percent is things like VOC testing for
20:00:18 **11** consumer reports or just materials analysis or
20:00:23 **12** projects.
20:00:25 **13** **Q.** Just -- what's VOC?
20:00:28 **14** **A.** Hmm?
20:00:28 **15** **Q.** I don't know what VOC is.
20:00:30 **16** **A.** Oh. Volatile organic compounds. It's
20:00:34 **17** green labeling, furniture testing, pharmaceutical
20:00:38 **18** work for our FDA certification -- not certification
20:00:41 **19** but our FDA lab number.
20:00:44 **20** **Q.** So --
20:00:46 **21** MR. CIRSCH: Were you done, Bill?
20:00:47 **22** THE WITNESS: Yes.
20:00:48 **23** **Q.** (By Mr. Chachkes) I recall that I had
20:00:49 **24** asked you a question about when you did the testing
20:00:51 **25** for the samples in your report, and you said
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312

20:00:54 **1** November, October, December?
20:00:56 **2** **A.** It's all in the reports. You can go
20:00:58 **3** through the chain of custodies, you can see the dates
20:01:01 **4** on the analysis.
20:01:01 **5** **Q.** And what year? 2018?
20:01:03 **6** **A.** Yes, sir.
20:01:03 **7** **Q.** And during that time frame were you
20:01:10 **8** testing other samples of talc for asbestos?
20:01:16 **9** **A.** Yes.
20:01:16 **10** **Q.** And during that time frame were you
20:01:18 **11** testing other materials, not talc, for asbestos?
20:01:23 **12** **A.** Yes.
20:01:23 **13** **Q.** In that time frame were you testing
20:01:25 **14** asbestos?
20:01:27 **15** **A.** Well, we were doing regular PLM for
20:01:32 **16** products for added -- that have asbestos added to it,
20:01:36 **17** such as chrysotile, typically see chrysotile most of
20:01:39 **18** the time, some amosite.
20:01:41 **19** **Q.** Okay. Any products that you were testing
20:01:43 **20** that have either tremolite or anthophyllite in them?
20:01:46 **21** **A.** Other than cosmetic talc, no.
20:01:49 **22** **Q.** How many TEMs does your lab have?
20:01:51 **23** **A.** Four.
20:01:52 **24** **Q.** Do you use all four at the same time?
20:01:57 **25** **A.** If four analysts are busy, yes.
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20:01:59 **1** Q. Are they all in the same room?

20:02:01 **2** A. No.

20:02:01 **3** Q. Are they each -- do they each have their

20:02:06 **4** own TEM room?

20:02:07 **5** A. Yes.

20:02:07 **6** Q. So in a given TEM room is it just the TEM

20:02:11 **7** there that's for testing?

20:02:13 **8** A. Correct.

20:02:14 **9** Q. There's no PLM or XRD in the TEM room?

20:02:21 **10** A. No.

20:02:21 **11** Q. Do you use the same PLMs for

20:02:27 **12** asbestos-containing material as you use for testing

20:02:29 **13** talc?

20:02:30 **14** A. No. We have a specific PLM scope that has

20:02:35 **15** been modified to enhance sensitivity.

20:02:39 **16** Q. So that PLM is only used for talc?

20:02:41 **17** A. Yes.

20:02:41 **18** Q. Are your talc samples handled in the same

20:02:46 **19** room as asbestos samples?

20:02:47 **20** A. No.

20:02:47 **21** Q. Does MAS have a clean room?

20:02:49 **22** A. We don't have a Class 100 clean room. We

20:02:54 **23** have a specific room set up just for cosmetic talc.

20:02:58 **24** Q. And what steps -- why haven't you

20:03:03 **25** constructed a clean room?

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314

20:03:06 **1** MR. CIRSCH: Object to form.

20:03:06 **2** THE WITNESS: Because there's no need to.

20:03:08 **3** If there's any work that is done on any of these

20:03:11 **4** materials, they're done in a biological hood so

20:03:17 **5** that if there's any escape of material, it can

20:03:22 **6** be filtered. We don't do a clean room.

20:03:24 **7** Q. (By Mr. Chachkes) Okay.

20:03:24 **8** A. It's a clean hood but not a clean room.

20:03:27 **9** Q. Okay. So your aliquot of a particular

20:03:32 **10** bottle for the purpose of doing a TEM test or whether

20:03:35 **11** it's a PLM test, that aliquot's taken out in a hood?

20:03:38 **12** A. Yes. Your experts have been to our lab

20:03:41 **13** and one will be there tomorrow. You can ask him what

20:03:44 **14** they see when they get there to get their aliquots.

20:03:47 **15** Q. Does MAS test -- strike that.

20:03:49 **16** Does the same analysts who test

20:03:54 **17** asbestos-containing material in your lab, do they

20:03:56 **18** also test for -- test talc for asbestos?

20:03:59 **19** A. No. The same analysts for PLM? I mean, I

20:04:05 **20** guess I need clarification of that question.

20:04:07 **21** Q. How about for TEM?

20:04:08 **22** A. TEM, if we have other samples that are

20:04:11 **23** being run, the same analyst will do that sample, too,

20:04:14 **24** in the TEM.

20:04:15 **25** Q. Do your analysts wear any sort of special

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20:04:18 **1** clothing when testing talcum powder samples for

20:04:21 **2** asbestos?

20:04:21 **3** A. No. They use special hoods. There is no

20:04:28 **4** danger of being exposed to asbestos in the talcum

20:04:33 **5** powder when you're pulling out TEM grids. It's

20:04:37 **6** trapped onto the TEM grids.

20:04:39 **7** There's never been, that I've heard of, of

20:04:41 **8** somebody getting exposed there. Everything is done

20:04:43 **9** in safety hoods. So none of our analysts are being

20:04:46 **10** exposed.

20:04:46 **11** Q. What was -- is it Dr. Rigler?

20:04:50 **12** A. Yes, it is.

20:04:51 **13** Q. What is Dr. Rigler's contribution to your

20:04:55 **14** expert report in this case?

20:04:56 **15** A. His contribution was to review it, to

20:05:00 **16** review all the data, to look at the data, make sure

20:05:04 **17** it's matched in the appropriate places. And he did

20:05:09 **18** the QA/QC report, so you can ask him tomorrow why he

20:05:13 **19** didn't put that one chart in. That's primarily it

20:05:16 **20** for this report.

20:05:17 **21** Q. When you say review the data, does that

20:05:20 **22** mean he reviewed it in the same substantive way that

20:05:24 **23** you did to make sure the analysts did their job?

20:05:26 **24** A. No. But he would review it that the data

20:05:29 **25** is there for the appropriate materials. But he

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316

20:05:34 **1** doesn't review it like I do.

20:05:36 **2** When I review the data, I review every

20:05:39 **3** sheet, every micrograph, every diffraction pattern so

20:05:44 **4** that I concur with the analysts' findings for the

20:05:48 **5** various tests that we've done.

20:05:50 **6** Q. So is it fair to say that his review is

20:05:55 **7** more sort of, let's say, a typo level and consistency

20:06:02 **8** level as opposed to substantive level?

20:06:05 **9** A. You'll have to ask him how much

20:06:07 **10** substantive level. But he was a TEM microscopist.

20:06:11 **11** He knows what the EDS pattern -- EDXA patterns look

20:06:17 **12** like and what they should be. He looks for the

20:06:20 **13** identification. But his -- but mine's more in depth

20:06:25 **14** on the data than his is.

20:06:27 **15** Q. Okay. Is he qualified to testify about

20:06:32 **16** how EDXA is -- EDSA -- EDXA is run?

20:06:37 **17** A. Sure.

20:06:37 **18** Q. Okay. And he's qualified to testify how

20:06:40 **19** PLM is run?

20:06:40 **20** A. He's not a PLM analyst. I don't know how

20:06:45 **21** much knowledge he has or if he could -- like I could,

20:06:49 **22** take me a while to sit down and actually analyze a

20:06:53 **23** PLM sample.

20:06:53 **24** Q. What about XRD, is he an expert in XRD?

20:07:06 **25** A. I don't believe so.

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20:07:07 **1** Q. Okay. What about SAED?
20:07:11 **2** A. Could he index a diffraction pattern by
20:07:16 **3** hand? You'll have to ask him.
20:07:18 **4** Q. Okay. Did he do any sort of substantive
20:07:20 **5** review of the SAED patterns?
20:07:23 **6** A. He knows the differences between talc
20:07:27 **7** patterns and anthophyllite type patterns, but that
20:07:30 **8** really was all my responsibility.
20:07:32 **9** Q. Okay. Does he have any responsibility for
20:07:36 **10** reviewing EDXA readouts?
20:07:40 **11** A. He did review them. He knows EDS spectras
20:07:45 **12** and the classic ratios of elements, silica to metals,
20:07:51 **13** that you would expect for these types of regulated
20:07:56 **14** asbestos fibers and bundles.
20:07:58 **15** Q. Is he qualified to testify to the same
20:08:05 **16** degree and substance as you regarding your January
20:08:08 **17** report?
20:08:09 **18** A. I don't know. I don't believe -- I don't
20:08:11 **19** believe he is as in-depth as I am on this January
20:08:15 **20** report with the data. I believe what his
20:08:19 **21** responsibility is, he can recognize the appropriate
20:08:22 **22** EDS patterns for the appropriate regulated asbestos.
20:08:26 **23** He's not a PLM analyst. He has reviewed -- he looks
20:08:31 **24** over, makes sure the materials are present, the
20:08:36 **25** QA/QC, the chains of custody, that sort of thing.
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318

20:08:38 **1** Q. Could he substitute for you as an expert
20:08:51 **2** in the case presenting this report?
20:08:54 **3** MR. CIRSCH: Object to form.
20:08:55 **4** THE WITNESS: I don't know.
20:08:57 **5** Q. (By Mr. Chachkes) That would be a
20:08:58 **6** question for him?
20:08:59 **7** A. You know, if I leave here and get hit by a
20:09:02 **8** bus, I guess we'll find out.
20:09:05 **9** Q. Would that be a question for him?
20:09:07 **10** A. Hoping that Dr. Longo get hits by a bus so
20:09:11 **11** he can step in and take my place?
20:09:12 **12** Q. Let's take the latter first.
20:09:14 **13** A. You'll have to ask him.
20:09:15 **14** Q. Okay. Why did you involve him?
20:09:21 **15** A. Because he's one of our senior scientists,
20:09:23 **16** and I involved him very early on. Dr. Rigler and I
20:09:27 **17** spent a lot of time collaborating together when we
20:09:32 **18** initially took on this project.
20:09:34 **19** And the main thing was we didn't feel it
20:09:36 **20** was the right thing to do to do the TEM long -- what
20:09:40 **21** I call the TEM long method, where to get some
20:09:44 **22** reasonable detection limits, you have to look at
20:09:46 **23** 500,000 grid openings. That ties up a TEM too long,
20:09:52 **24** and I just didn't think it was very efficient.
20:09:54 **25** We talked about the heavy liquid density
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20:09:56 **1** separation early on, that that was the way to go, the
20:09:59 **2** problems associated with it because of the density of
20:10:03 **3** anthophyllite without iron versus iron.
20:10:06 **4** Chrysotile issue, I'm sure we'll figure
20:10:09 **5** out together on how to extract chrysotile using the
20:10:13 **6** old Windsor method with citric acid. He's a very
20:10:18 **7** bright scientist.
20:10:19 **8** Q. You've issued reports on other bottles of
20:10:22 **9** J&J talc not in the MDL where he wasn't a coauthor of
20:10:25 **10** the report; correct?
20:10:26 **11** A. Is that right?
20:10:27 **12** Q. I'm asking.
20:10:28 **13** A. I think he's been on every report.
20:10:30 **14** MR. CHACHKES: Okay.
20:10:33 **15** I think I have no further questions, but
20:10:36 **16** there are other people, and I'm just going to
20:10:38 **17** maintain the objection I stated at the
20:10:39 **18** beginning, which is we'll have to review the
20:10:43 **19** enormous amount of data that was belatedly
20:10:45 **20** produced and determine whether to re-call the
20:10:46 **21** witness.
20:10:46 **22** MR. PROST: I'm happy to go now. I don't
20:10:50 **23** have much.
20:13:19 **24** (Off the record.)
20:13:19 **25** MR. CHACHKES: Just to amend what I said
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320

20:13:21 **1** before, I'm going to reserve time after the
20:13:23 **2** other defendant or defendants ask their
20:13:27 **3** questions, which will give me time to review my
20:13:33 **4** notes to see if I'm actually done.
20:13:35 **5** EXAMINATION
6 BY MR. PROST:
7 Q. Hi, Dr. Longo.
8 A. Good evening.
20:13:39 **9** Q. With respect to Dr. Rigler, did he subject
20:13:41 **10** any substantive changes?
20:13:43 **11** A. He might have.
20:13:44 **12** Q. You don't recall any as you sit here?
20:13:47 **13** A. No. I mean, we all have our own editing
20:13:51 **14** style. Sometimes he'd say this doesn't make any
20:13:52 **15** sense, which is not uncommon with my struggle with
20:13:56 **16** the English language.
20:13:57 **17** Q. Okay. You mentioned that you do not store
20:14:01 **18** talc and asbestos samples in the same room at MAS?
20:14:04 **19** A. Correct.
20:14:04 **20** Q. Do you store all of your talc samples in
20:14:08 **21** the same room regardless of the manufacturer or
20:14:12 **22** supplier?
20:14:13 **23** A. They are stored in the same room in
20:14:17 **24** separate containers, separate sealed bags, and
20:14:21 **25** separate locked cabinets.
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20:14:22 **1** Q. Are there other talc samples provided by
20:14:24 **2** other manufacturers or suppliers other than Johnson &
20:14:27 **3** Johnson?
20:14:27 **4** A. Yes.
20:14:28 **5** Q. How many others?
20:14:29 **6** A. A number.
20:14:32 **7** Q. More than five?
20:14:35 **8** A. I don't know.
20:14:37 **9** Q. And these samples span decades from these
20:14:41 **10** other manufacturers as to Johnson & Johnson?
20:14:44 **11** A. Typically.
20:14:44 **12** Q. With respect to fibrous talc, I think I
20:14:49 **13** heard you say this, but fibrous talc is not asbestos;
20:14:52 **14** right?
20:14:53 **15** MS. O'DELL: Object to form.
20:14:54 **16** THE WITNESS: It's not one of the
20:14:55 **17** regulated asbestos types.
20:14:56 **18** Q. (By Mr. Prost) And so no matter the shape
20:14:57 **19** or size or aspect ratio, if it's chemically talc,
20:15:01 **20** it's not asbestos?
20:15:02 **21** A. It is not one of the regulated asbestos
20:15:07 **22** types that we would report as asbestos.
20:15:09 **23** Q. You attempted to quantify the fibrous talc
20:15:13 **24** in your most recent January 15, 2019, report; is that
20:15:19 **25** right?
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322

20:15:19 **1** A. Yes.
20:15:19 **2** Q. And just describe briefly how you did
20:15:21 **3** that.
20:15:21 **4** A. It's very qualitative. The analyst for
20:15:25 **5** each of these samples going all the way back, they
20:15:28 **6** make an estimate of the number of particles they're
20:15:33 **7** seeing in the grid openings as they go through their
20:15:36 **8** 100 grid openings.
20:15:37 **9** At the end of that analysis, they'll state
20:15:39 **10** that I was typically seeing one or two or three, and
20:15:43 **11** then they'll record one of the typical asbestos talc
20:15:49 **12** fibers, diffraction pattern, EDS.
20:15:52 **13** So it's a qualitative estimate.
20:15:54 **14** Q. In your March 2018 report, did you attempt
20:15:59 **15** to quantify the fibrous talc?
20:16:01 **16** A. We collected the data, as I recall, but I
20:16:05 **17** didn't go through the exercise of just doing the
20:16:07 **18** math.
20:16:08 **19** Q. Why did you change your methodology in the
20:16:11 **20** quantification of fibrous talc between your
20:16:14 **21** March 2018 report and in your most recent report?
20:16:16 **22** MR. CIRSCH: Object to form.
20:16:17 **23** THE WITNESS: I became curious on how much
20:16:20 **24** fibrous talc is in the samples where we're
20:16:22 **25** seeing fibrous talc. Some samples we see it,
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20:16:25 **1** some we don't, especially by TEM. PLM, it's
20:16:29 **2** just about in every sample.
20:16:32 **3** With the heavy liquid density separation,
20:16:35 **4** you know, theoretically, you should be removing
20:16:37 **5** all the fibrous talc along with the platy talc,
20:16:40 **6** but there is some fibers in there.
20:16:42 **7** A true quantitative analysis where -- is
20:16:45 **8** to take any of these samples that have fibrous
20:16:48 **9** talc in and do a regular no heavy liquid density
20:16:53 **10** separation and see how many orders of magnitude
20:16:56 **11** the fibrous talc is compared to what we're
20:16:59 **12** seeing in TEM with the heavy density liquid
20:17:02 **13** separation.
20:17:02 **14** Q. (By Mr. Prost) On page 13 of your
20:17:04 **15** January 2019 report, you quantify it as abundant,
20:17:10 **16** common, or trace; is that right?
20:17:11 **17** A. Yes.
20:17:12 **18** Q. And is there any published or
20:17:16 **19** peer-reviewed literature that guided those
20:17:19 **20** categories, or is that something that you or MAS came
20:17:21 **21** up with?
20:17:22 **22** A. It was our collective -- what would you
20:17:26 **23** say is trace, how do we kind of give some information
20:17:28 **24** about it, because that's what we were doing for a
20:17:31 **25** while.
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324

20:17:33 **1** Now we're just using the trace as it's one
20:17:37 **2** to three, on average, per opening. And to do the
20:17:41 **3** analysis or do the semiquantitative estimation of the
20:17:45 **4** number of fibrous talc structures per gram, we just
20:17:49 **5** use one per grid opening.
20:17:51 **6** Q. So there is no established standard for
20:17:54 **7** those three categories that you relied upon?
20:17:59 **8** MS. O'DELL: Object to the form.
20:18:00 **9** THE WITNESS: I don't think I've seen a
20:18:02 **10** document that says if you see fibrous talc, if
20:18:04 **11** you only have one or two particles, that it's
20:18:06 **12** trace. And it's not -- it's trace compared to
20:18:08 **13** what you're seeing there so that you can give
20:18:10 **14** some qualitative estimate.
20:18:14 **15** And we were using this before I got the
20:18:17 **16** idea of actually doing a qualitative count based
20:18:21 **17** on one fibrous talc structure per opening.
20:18:27 **18** Q. (By Mr. Prost) Have you done any quality
20:18:29 **19** assurance reports for fibrous talc?
20:18:32 **20** A. No, sir.
20:18:33 **21** Q. And how long have you been analyzing
20:18:43 **22** materials for asbestos content? When is the first
20:18:46 **23** time you did that? How many years ago?
20:18:48 **24** A. The first TEM grids that I ever analyzed
20:18:53 **25** are in a -- stuck on a petri dish and I have it on
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20:18:58 **1** the wall. I think it was about approximately 1985 or
 20:19:02 **2** 1986.
 20:19:03 **3 Q.** Is the first time that you ever documented
 20:19:05 **4** fibrous talc 2018?
 20:19:07 **5 A.** No. I used to do a lot of product ID in
 20:19:17 **6** the property damage cases, and one of the
 20:19:20 **7** fingerprints for U.S. Gypsum Audicote Acoustical
 20:19:26 **8** Plaster was that it had approximately 10 percent
 20:19:29 **9** International Talc in it. And International Talc,
 20:19:34 **10** obviously, eventually is Vanderbilt Talc when they
 20:19:37 **11** bought that. And it was a fibrous talc component, so
 20:19:40 **12** we were constantly analyzing for fibrous talc.
 20:19:43 **13** Because U.S. Gypsum Audicote was the only
 20:19:47 **14** acoustical plaster out there that had a combination
 20:19:49 **15** of 10 percent perlite -- excuse me -- 10 percent
 20:19:53 **16** chrysotile, 60 percent perlite, approximately
 20:19:57 **17** 10 percent fibrous talc, and the rest of it was
 20:20:02 **18** bentonite clay, Wyoming type, and then a few
 20:20:06 **19** percentages, 2 or 3 percent of calcium carbonate.
 20:20:09 **20** That fibrous talc was the fingerprint for
 20:20:12 **21** that product. So we spent a lot of time in these
 20:20:15 **22** types of situations debating fibrous talc.
 20:20:20 **23** And I must have done that -- and that was
 20:20:22 **24** when I was doing all the TEM analysis on the product
 20:20:25 **25** ID. I bet I analyzed hundreds and hundreds and
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326

20:20:28 **1** hundreds of samples specifically, besides looking for
 20:20:31 **2** the other primary ingredients, is looking at and
 20:20:34 **3** making sure if it was U.S. Gypsum Audicote versus
 20:20:38 **4** National Gypsum spray -- God, I've forgotten the
 20:20:44 **5** name -- or one of the other without the fibrous talc.
 20:20:47 **6 Q.** That was all industrial talc?
 20:20:50 **7 A.** Yes.
 20:20:50 **8 Q.** So the first time you would have
 20:20:53 **9** documented the presence of fibrous talc in cosmetic
 20:20:56 **10** talc, would that have been 2018?
 20:20:58 **11 A.** Whenever we first started doing these
 20:21:00 **12** analyses. I think that was November, December,
 20:21:05 **13** January, or so, in early 2018.
 20:21:08 **14 Q.** I know you're not giving any medical
 20:21:11 **15** causation opinions with respect to disease or ovarian
 20:21:18 **16** cancer, am I also correct you're not going to offer
 20:21:19 **17** any opinions as to the root of exposure, whether it
 20:21:23 **18** be the female reproductive tract versus inhalation;
 20:21:23 **19** is that correct?
 20:21:23 **20 A.** That is correct. I will not be giving
 20:21:26 **21** those types of opinions.
 20:21:27 **22 Q.** You've never been to a talc mine?
 20:21:30 **23 A.** I still haven't.
 20:21:30 **24 Q.** You've not studied the geology of the
 20:21:34 **25** mines in Vermont or China, have you?
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20:21:37 **1** MR. CIRSCH: Object to form.
 20:21:38 **2** THE WITNESS: I am not a geologist. My
 20:21:40 **3** role is what's in the bottle.
 20:21:41 **4 Q.** (By Mr. Prost) Do you agree that the
 20:21:44 **5** geologic process that controls the formation of any
 20:21:47 **6** given talc deposits are unique?
 20:21:49 **7** MS. O'DELL: Object to the form.
 20:21:50 **8** THE WITNESS: I'm not a geologist. I
 20:21:52 **9** don't know how unique, especially for the
 20:21:56 **10** Vermont and Italian mines. We see from those
 20:22:01 **11** time periods that they have asbestos.
 20:22:02 **12** So I'll let other geologists say how
 20:22:05 **13** unique or not unique they are. That's not my
 20:22:07 **14** area.
 20:22:07 **15 Q.** (By Mr. Prost) You would expect the
 20:22:09 **16** accessory minerals in any given talc deposit to be
 20:22:12 **17** different from one continent to another, wouldn't
 20:22:15 **18** you?
 20:22:15 **19** MR. CIRSCH: Object to form.
 20:22:16 **20** THE WITNESS: I don't have an expectation
 20:22:18 **21** one way or the other.
 20:22:18 **22 Q.** (By Mr. Prost) You can't name for me the
 20:22:21 **23** mines in Vermont that would have been sourced for J&J
 20:22:24 **24** baby powder, can you?
 20:22:26 **25 A.** Besides Hammondsville, Argonaut, and
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328

20:22:30 **1** what's the other one? I'm missing one.
 20:22:32 **2 Q.** You're not able to break down the samples
 20:22:36 **3** that you've tested in your reports pertaining to any
 20:22:40 **4** specific mine in Vermont or a year, are you?
 20:22:42 **5 A.** Without going through all the documents
 20:22:44 **6** showing that when you switched from Hammonds -- or
 20:22:49 **7** Argonaut, there's specific years in discovery, but I
 20:22:50 **8** haven't bothered doing -- I haven't done that, if
 20:22:54 **9** it's important.
 20:22:54 **10 Q.** All right. Do you know when Imerys began
 20:22:57 **11** supplying talc for Johnson & Johnson Baby Powder?
 20:23:00 **12 A.** It's always unclear to me. Of course,
 20:23:07 **13** it's the -- in 1980 we have some -- maybe with the
 20:23:12 **14** Vermont and the later '80s.
 20:23:17 **15** I haven't memorized -- and because we've
 20:23:21 **16** been going so long, I'm tired. I've had that
 20:23:24 **17** information at the tip of my tongue before, but I
 20:23:26 **18** would have to look it back up what Imerys says in
 20:23:30 **19** their sworn interrogatories when they started doing
 20:23:32 **20** that, as well as Johnson & Johnson when they say they
 20:23:34 **21** started buying it versus when it was their own mine
 20:23:37 **22** and that sort of thing.
 20:23:38 **23 Q.** Are you familiar or knowledgeable
 20:23:40 **24** regarding the selective mining processes that Imerys
 20:23:44 **25** would have used?
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20:23:45 **1** **A.** Is that like the video where they were
20:23:47 **2** blowing it up?
20:23:50 **3** I'm not here to talk about selective
20:23:52 **4** mining processes or not. My role is just an analysis
20:23:57 **5** of what's in these particular containers.
20:24:01 **6** **Q.** You're not familiar or knowledgeable
20:24:03 **7** regarding the flotation process that Imerys used over
20:24:06 **8** the years, are you?
20:24:07 **9** **A.** I've read a lot about it. In fact, we're
20:24:09 **10** going to use one, I believe, with the citric acid to
20:24:13 **11** try to concentrate the chrysotile if present.
20:24:17 **12** So without looking at it and going through
20:24:21 **13** the processes that have been stated in a lot of the
20:24:25 **14** documents I've read, other than that, no.
20:24:27 **15** **Q.** Are you aware of any published literature
20:24:31 **16** stating that any of the mines used to source
20:24:35 **17** Johnson & Johnson Baby Powder were contaminated with
20:24:38 **18** asbestos or amphibole asbestos?
20:24:40 **19** **A.** Published literature versus in-house
20:24:44 **20** testing and company's own stuff?
20:24:47 **21** **Q.** Say peer-reviewed literature.
20:24:49 **22** **A.** I'm sorry, could you repeat that?
20:24:52 **23** **Q.** Are you aware of any peer-reviewed
20:24:54 **24** literature stating that any of the mines used to
20:24:56 **25** source Johnson & Johnson's Baby Powder or Shower to
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330

20:24:59 **1** Shower were contaminated with amphibole asbestos or
20:25:02 **2** chrysotile?
20:25:03 **3** **MS. O'DELL:** Object to the form.
20:25:04 **4** **THE WITNESS:** I mean, the geological
20:25:06 **5** reports that go back and -- and Alice Blount can
20:25:10 **6** pick on -- Alice Blount didn't say that this
20:25:13 **7** came from Vermont. I assume she knows where, as
20:25:15 **8** a geologist, as a consultant, where that talc
20:25:18 **9** came for that 1989 or that 1990 bottle of
20:25:22 **10** Johnson's Baby Powder that she tested to show
20:25:25 **11** tremolite asbestos.
20:25:27 **12** But an actual peer-reviewed publication
20:25:30 **13** stating that the accessory minerals are asbestos
20:25:33 **14** type or regulated asbestos as counted by these
20:25:41 **15** standard peer-reviewed protocols, I can't think
20:25:45 **16** of any.
20:25:46 **17** **Q.** (By Mr. Prost) Have you read Alice
20:25:48 **18** Blount's deposition transcript from the Ingham case?
20:25:50 **19** **A.** I have.
20:25:51 **20** **Q.** And is it your belief from reading that
20:25:55 **21** testimony that she's saying that sample I from her
20:25:59 **22** 1990 report was a bottle of Johnson & Johnson Baby
20:26:03 **23** Powder?
20:26:03 **24** **A.** She says it is.
20:26:03 **25** **Q.** Did you read where she said she bought
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20:26:06 **1** that bottle in 1996?
20:26:10 **2** **MR. CIRSCH:** Object to form.
20:26:11 **3** **THE WITNESS:** Well, that would have been
20:26:12 **4** hard to go back in time with it. I think she
20:26:14 **5** also testified that she bought a number of
20:26:16 **6** bottles over the years.
20:26:17 **7** **Q.** (By Mr. Prost) You would agree she was a
20:26:19 **8** bit confused in her deposition?
20:26:21 **9** **MR. CIRSCH:** Object to form.
20:26:21 **10** **THE WITNESS:** No, sir, I don't make that
20:26:23 **11** judgment about anybody.
20:26:24 **12** **Q.** (By Mr. Prost) I've heard it read and
20:26:30 **13** think you've probably been asked this before, but
20:26:32 **14** would you agree that less than 1 percent of the
20:26:35 **15** amphiboles in the world are asbestiform?
20:26:39 **16** **MR. CIRSCH:** Object to form.
20:26:40 **17** **THE WITNESS:** You know, I just don't know
20:26:51 **18** what 1 percent of probably, I don't know, how
20:26:54 **19** many zero tons of amphibole's out there.
20:26:57 **20** Sometimes people seem to suggest that 1 percent
20:27:00 **21** isn't very much. 1 percent of something really
20:27:02 **22** big tends to be a lot.
20:27:04 **23** **Q.** (By Mr. Prost) You're familiar with
20:27:05 **24** peer-reviewed studies, though, that have said that;
25 right?
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332

20:27:09 **1** **A.** Yes, sir.
20:27:09 **2** **Q.** And you don't have reason to disagree with
20:27:11 **3** that, do you?
20:27:13 **4** **A.** No, sir. I'm just curious on if you were
20:27:15 **5** to take every amphibole mineral in the world and then
20:27:18 **6** say only 1 percent of that is asbestos. There
20:27:22 **7** certainly seems to be enough amphibole asbestos in
20:27:25 **8** the world to supply a very large contingent of
20:27:29 **9** products over the years until it got all banned or no
20:27:33 **10** longer made for amphiboles.
20:27:34 **11** So I don't have any -- I can't give you a
20:27:36 **12** relationship what 1 percent means. It's not
20:27:40 **13** 1 percent of a pound. It's 1 percent of -- I don't
20:27:43 **14** know how many -- how you would weigh it all.
20:27:47 **15** **Q.** I know you might think it's still a lot,
20:27:50 **16** but you have no reason to disagree with the
20:27:52 **17** peer-reviewed literature that you've seen that has
20:27:54 **18** said that less than 1 percent of the amphiboles in
20:28:00 **19** the earth's crust is asbestiform?
20:28:04 **20** **A.** No, sir. I just was curious how much of
20:28:06 **21** the crust is made up of the percentage of what the
20:28:10 **22** weight is.
20:28:11 **23** **Q.** I think I've seen you testify before --
20:28:13 **24** and I want to see if you still agree -- if an
20:28:16 **25** amphibole is crystallized in a nonasbestiform habit,
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20:28:22 **1** no matter how much you can grind it up, it can never
 20:28:26 **2** turn into asbestos or asbestiform?
 20:28:29 **3** MR. CIRSCH: Object to form.
 20:28:30 **4** THE WITNESS: It's unclear to me what an
 20:28:33 **5** nonasbestiform habit is other than you may have
 20:28:36 **6** massive, blocky. It's all a geological shape.
 20:28:39 **7** If you grind up a rock, you do not produce
 20:28:44 **8** asbestos. If you grind up tremolitic -- massive
 20:28:50 **9** tremolitic, you typically will get both, but you
 20:28:53 **10** will not get bundles.
 20:28:55 **11** What we do is count it as regulated
 20:28:58 **12** asbestos per the protocols.
 20:29:01 **13** Q. (By Mr. Prost) Right. So if it
 20:29:03 **14** crystallizes in a nonasbestiform habit, tremolite,
 20:29:06 **15** for example, and you grind it up and it falls under
 20:29:09 **16** the counting rules you use, you call it asbestiform,
 20:29:12 **17** regardless; right?
 20:29:14 **18** MR. CIRSCH: Object to form.
 20:29:15 **19** THE WITNESS: Well, everything we've
 20:29:17 **20** looked at has crystallized in a fibrous habit.
 20:29:20 **21** Asbestiform habit and fibrous habit are the same
 20:29:23 **22** thing because we're looking at fibers.
 20:29:25 **23** If you look at all the crystalline habits,
 20:29:27 **24** there's a wide range, and most of them are not
 20:29:29 **25** fibrous, only one where they would call fibrous.
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334

20:29:33 **1** But you're not going to get an asbestiform
 20:29:36 **2** bundle from grinding up cleavage fragments.
 20:29:40 **3** Q. (By Mr. Prost) I'm not talking about what
 20:29:42 **4** you've seen or looked at or issued in your report;
 20:29:44 **5** but just hypothetically, if you have nonasbestiform
 20:29:47 **6** tremolite or amphibole that's crystallized in a
 20:29:50 **7** nonasbestiform habit, no matter -- if someone were to
 20:29:54 **8** grind that up so that the shape came out to be, under
 20:29:58 **9** the counting rules that you go by, you would still
 20:30:00 **10** call that asbestiform?
 20:30:03 **11** MR. CIRSCH: Object to form.
 20:30:04 **12** THE WITNESS: Well, it's a hypothetical I
 20:30:05 **13** don't believe exists. If you grind up a rock or
 20:30:08 **14** something that's massive, you get little pieces,
 20:30:10 **15** irregular shapes. To get a perfectly parallel
 20:30:15 **16** side I think is rare.
 20:30:17 **17** And you have to look at what else we're
 20:30:20 **18** seeing here. Every bundle is asbestiform. And
 20:30:25 **19** you would think you would have the same type of
 20:30:27 **20** crystalline habit that is generating both
 20:30:31 **21** asbestiform as well as some cleavage fragments.
 20:30:34 **22** We do see cleavage fragments. But it's my
 20:30:38 **23** belief you get both. It's never one or the
 20:30:40 **24** other.
 20:30:40 **25** Q. (By Mr. Prost) If an amphibole is
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20:30:42 **1** fibrous, in your opinion, is it necessarily
 20:30:44 **2** asbestiform?
 20:30:47 **3** A. In my opinion, if it is fibrous, it is
 20:30:49 **4** asbestiform because it has a form like asbestos.
 20:30:52 **5** Q. Are you aware of any peer-reviewed studies
 20:30:55 **6** to support that?
 20:30:59 **7** A. Other than --
 20:31:00 **8** Q. I'm sorry, that if an amphibole is
 20:31:02 **9** fibrous, it necessarily has to be asbestiform?
 20:31:06 **10** A. You know, other than the geological
 20:31:09 **11** definition for a crystalline habit and that it is
 20:31:12 **12** fibrous and, you know, whatever the population is,
 20:31:16 **13** population is more than one.
 20:31:18 **14** But we're getting enough data now that
 20:31:20 **15** these populations -- and you just can't -- you know,
 20:31:25 **16** no longer look at from a sample from the same mine
 20:31:30 **17** that it's a unique thing.
 20:31:31 **18** All the samples from the mine that we're
 20:31:33 **19** seeing over and over again show asbestiform minerals
 20:31:37 **20** in it, specifically tremolite series and the
 20:31:39 **21** anthophyllite series.
 20:31:42 **22** It's just my opinion. I mean, others may
 20:31:44 **23** disagree, but that's my opinion.
 20:31:45 **24** Q. Is there a specific article or
 20:31:48 **25** peer-reviewed literature or study that says if you
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336

20:31:50 **1** have an amphibole and it's in a fibrous form, that it
 20:31:53 **2** is necessarily asbestos or asbestiform?
 20:31:57 **3** MR. CIRSCH: Object to form.
 20:31:58 **4** THE WITNESS: Every protocol that we're
 20:31:59 **5** using here has a definition of what you call a
 20:32:01 **6** regulated asbestos. Everything that I have
 20:32:04 **7** reported has followed the peer-reviewed
 20:32:06 **8** protocols and methods to say it is a regulated
 20:32:09 **9** asbestos that is fibrous to whatever degree they
 20:32:12 **10** use for their counting rules. In my opinion,
 20:32:14 **11** that makes it all asbestiform.
 20:32:15 **12** Q. (By Mr. Prost) So the counting rules and
 20:32:16 **13** the protocols that you used for your reports are what
 20:32:22 **14** you're talking about?
 20:32:22 **15** A. Yes, sir.
 20:32:23 **16** Q. No other articles or papers that you can
 20:32:26 **17** think of?
 20:32:26 **18** A. Not as I sit here this second, no.
 20:32:28 **19** Q. Are you aware of any peer-reviewed
 20:32:30 **20** articles or literature that say the opposite, that
 20:32:32 **21** you can have fibrous amphiboles that are not
 20:32:35 **22** asbestiform?
 20:32:37 **23** A. There's a couple.
 20:32:39 **24** MS. O'DELL: Object.
 20:32:40 **25** Q. (By Mr. Prost) And who would those be
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20:32:41 1 from?

20:32:41 2 A. Oh, I think Ann Wylie has published one or

20:32:44 3 two. Just depends on who the authors are.

20:32:48 4 Q. And you just disagree with that?

20:32:50 5 A. Well, I don't agree with their opinions

20:32:52 6 that if it is a bundle. But I disagree that if you

20:32:56 7 take an individual fiber that you can't tell one way

20:32:59 8 or the other because it has the same chemistry, it

20:33:03 9 has the same crystalline pattern, it has the same

20:33:07 10 surface charge, and it's called a regulated asbestos

20:33:10 11 fiber, if it meets all that counting criteria. In my

20:33:15 12 opinion, if it is fibrous and it is asbestos, it is

20:33:19 13 asbestiform.

20:33:20 14 Q. I know you think that or you testified

20:33:23 15 that high tensile strength and flexibility don't mean

20:33:26 16 much because they can't be measured, I think; is that

20:33:29 17 a fair way of describing what you've said or what

20:33:32 18 your opinion is?

20:33:33 19 A. Well, it's not defined. And both the

20:33:36 20 polarized light microscope as well as the

20:33:39 21 transmission electron microscope do not have any

20:33:43 22 ability to make those measurements. It's just a

20:33:45 23 general description.

20:33:47 24 Q. Wouldn't you agree that there's ways to

20:33:50 25 observe whether something has high tensile strength

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338

20:33:53 1 and flexibility?

20:33:54 2 A. Sure. If you go to the mine and get a --

20:33:57 3 I think a 10 centimeter sample is the minimum, and

20:34:00 4 tape it to paper and go put it on an Instron, which

20:34:03 5 is a device that will measure tensile strength, I

20:34:07 6 wouldn't want to be standing around when you do it.

20:34:10 7 Because when they pop, they'll spread fibers

20:34:14 8 everywhere because you're just dealing with large

20:34:17 9 bundles.

20:34:17 10 With a transmission electron microscope,

20:34:19 11 with a polarized light microscope, or even XRD, it's

20:34:22 12 impossible. There is no ability to make that

20:34:25 13 measurement. And standard protocols for making

20:34:29 14 determinations or measurements lay out how you do

20:34:31 15 that. They don't even define what high tensile

20:34:35 16 strength is.

20:34:36 17 Q. Under PLM, is it your opinion that --

20:34:40 18 sounds like it is your opinion -- it is impossible to

20:34:43 19 make a determination whether a population of fibers

20:34:48 20 or a bundle has high tensile strength or flexibility?

20:34:52 21 A. It is impossible. And they don't provide

20:34:56 22 you any method for doing that.

20:34:57 23 Q. In terms of curvature, splayed ends,

20:35:03 24 parallel sides, that sort of thing, you don't think

20:35:04 25 that gives any guidance on the observance of high

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20:35:08 1 tensile strength and flexibility?

20:35:09 2 MR. CIRSCH: Object to form.

20:35:10 3 THE WITNESS: No. You know, if you're

20:35:13 4 going to look at the published literature for

20:35:14 5 high tensile strength for chrysotile, amosite,

20:35:18 6 and crocidolite, you're running around 90,000 to

20:35:21 7 120,000 psi.

20:35:22 8 If you look at what the characteristics or

20:35:25 9 tensile strength is for tremolite anthophyllite,

20:35:27 10 it's about 4,000 psi, and it's brittle. And

20:35:31 11 you're milling it.

20:35:32 12 So if you can see the bundles at times

20:35:35 13 that we get, you can see where it has been

20:35:38 14 milled and broken in half. There's nothing

20:35:41 15 there to do that.

20:35:42 16 When we identify regulated asbestos in the

20:35:45 17 PLM method, it meets the criteria for what they

20:35:49 18 say is regulated. It has -- those individual

20:35:52 19 fibers and those bundles are all greater,

20:35:55 20 typically, on average, greater than 20-to-1.

20:35:58 21 They can be broken down to smaller fibers

20:36:00 22 and bundles. It's greater than -- the width of

20:36:04 23 the structure is greater than 5 micrometers. It

20:36:07 24 meets the criteria for the ISO 22262-2.

20:36:11 25 Nowhere in any of that method does it tell

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340

20:36:14 1 you, oh, you better measure the tensile

20:36:17 2 strength.

20:36:17 3 Q. (By Mr. Prost) The 34 or 35 samples from

20:36:21 4 your March 2018 report, you're still relying upon the

20:36:25 5 results of that report here in the MDL; is that

20:36:29 6 right?

20:36:29 7 A. No, I'm not. I'm relying on the MDL

20:36:32 8 report. The only thing that the MDL does is verify

20:36:36 9 our earlier findings, but I'm not relying on it here.

20:36:38 10 Q. Well, your MDL report includes the

20:36:40 11 findings of positive of what you're calling asbestos,

20:36:44 12 though, in those -- in terms of your computations of

20:36:47 13 the percentages?

20:36:47 14 A. I'm sorry, could you repeat that?

20:36:49 15 Q. Sorry, it was -- yeah, clumsy.

20:36:51 16 In your January 2019 MDL report, you're

20:36:54 17 including the findings of those original Johnson &

20:36:58 18 Johnson samples, those 35 in your overall

20:37:01 19 percentages, aren't you?

20:37:02 20 A. No. The only thing that's in there that

20:37:04 21 came from the original report is that MDL sample, the

20:37:10 22 1978 MDL sample. That's the only sample.

20:37:15 23 Q. You changed your methodology from the

20:37:19 24 March 2018 report until now. Why did you do that?

20:37:22 25 MR. CIRSCH: Object to form.

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20:37:23 **1** THE WITNESS: Because we -- we didn't
 20:37:27 **2** really change it. We just started using the
 20:37:31 **3** definitions and the ability for the ISO 22262-2
 20:37:35 **4** because it's an International Standard that has
 20:37:37 **5** been peer-reviewed by all the international
 20:37:41 **6** scientists that are on it or in the committees,
 20:37:44 **7** and it provides a standard method other than
 20:37:47 **8** just the Blount heavy density liquid separation
 20:37:50 **9** and TEM.
 20:37:51 **10** **Q.** (By Mr. Prost) Is the method you're doing
 20:37:53 **11** now more reliable than what you did last year?
 20:37:55 **12** **A.** No.
 20:37:56 **13** **MR. CIRSCH:** Object to form.
 20:37:56 **14** **THE WITNESS:** They are both reliable.
 20:37:59 **15** **Q.** (By Mr. Prost) Is your concentration
 20:38:02 **16** preparation any different now than what you did in
 20:38:07 **17** early 2018, that first report?
 20:38:10 **18** **A.** No. We are using the exact same method,
 20:38:16 **19** except the ISO 22262-2 says use heavy density liquid
 20:38:22 **20** of 2.85, if I remember, and Blount had said 2.81.
 20:38:30 **21** So now I have a method that specifically
 20:38:32 **22** uses 2.85 that we have been using under Blount.
 20:38:37 **23** **Q.** For the Johnson & Johnson MDL samples, I
 20:38:43 **24** think you testified that some of those containers had
 20:38:48 **25** been previously opened?
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342

20:38:51 **1** **MS. O'DELL:** Object to the form.
 20:38:53 **2** **THE WITNESS:** Well, they got previously
 20:38:55 **3** opened when they were split. I don't have any
 20:38:59 **4** history on what Johnson & Johnson did with
 20:39:03 **5** those, but certainly when they got split up in
 20:39:06 **6** New Jersey for samples, they were opened in some
 20:39:10 **7** manner.
 20:39:10 **8** **Q.** (By Mr. Prost) The Imerys samples, the
 20:39:12 **9** railcar samples, I haven't seen any photographs of
 20:39:16 **10** those, and I think when we talked last time you said
 20:39:19 **11** you could produce those?
 20:39:20 **12** **A.** Oh, I forgot. Yes.
 20:39:21 **13** **Q.** You do have photos of those somewhere that
 20:39:23 **14** you can produce them?
 20:39:23 **15** **A.** Yes. It should -- I'll endeavor to get
 20:39:27 **16** those.
 20:39:27 **17** **Q.** All right. I guess we'll ask that those
 20:39:30 **18** be produced.
 20:39:30 **19** You're not familiar with how Imerys stored
 20:39:35 **20** those samples before they were produced; right?
 20:39:38 **21** **A.** No.
 20:39:38 **22** **Q.** Or what specific mines they came out of?
 20:39:42 **23** **MS. O'DELL:** Object to the form.
 20:39:43 **24** **THE WITNESS:** Well, I guess it would be
 20:39:45 **25** easy to track down if there is information and
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20:39:49 **1** testimony about when different mines were
 20:39:52 **2** started and stopped.
 20:39:53 **3** **Q.** (By Mr. Prost) Your opinion on fibers per
 20:40:09 **4** gram and your extrapolation from what you found in
 20:40:12 **5** the samples, am I correct that you are assuming that
 20:40:17 **6** the asbestos contamination is consistent throughout
 20:40:21 **7** the entire sample?
 20:40:23 **8** **A.** The accessory mineral -- the findings of
 20:40:25 **9** the asbestos accessory minerals is consistent
 20:40:30 **10** throughout. That's not me assuming it. That's the
 20:40:33 **11** protocol. Because all TEM analysis, air samples,
 20:40:37 **12** water samples, when you filter it or pull through a
 20:40:40 **13** filter, you make that assumption.
 20:40:41 **14** **Q.** Your calculations assume that the fibers
 20:40:44 **15** are present at the same levels and evenly distributed
 20:40:48 **16** throughout every milligram of the sample; is that
 20:40:53 **17** right?
 20:40:53 **18** **MR. CIRSCH:** Object to form.
 20:40:54 **19** **THE WITNESS:** That there will be -- this
 20:40:55 **20** is what the range is that we should find, as we
 20:41:00 **21** talked about ad nauseam -- I'm sorry -- we
 20:41:04 **22** talked about earlier.
 20:41:05 **23** If we found one and analyzed it again and
 20:41:07 **24** found zero, that would not be surprising because
 20:41:10 **25** we're right at the detection limit. But if we
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344

20:41:12 **1** found a significant number, 10, 15, 25, I would
 20:41:17 **2** expect that we would find positive samples in
 20:41:19 **3** each and every -- if we were to do that and do
 20:41:22 **4** that for some time, that there is enough in
 20:41:26 **5** there that would make that where we would find
 20:41:28 **6** similar concentrations.
 20:41:29 **7** **Q.** (By Mr. Prost) So at the detection limit
 20:41:34 **8** level where you're only finding a couple of fibers,
 20:41:38 **9** you wouldn't be surprised to examine the same sample
 20:41:42 **10** and not have a nondetect; is that right?
 20:41:44 **11** **A.** That wouldn't surprise me, and it wouldn't
 20:41:46 **12** surprise me if we had found two fibers the first time
 20:41:49 **13** or two asbestos -- regulated asbestos structures the
 20:41:52 **14** first time and next time you find four. So you will
 20:41:54 **15** have a range at those lower detection limits.
 20:41:58 **16** **Q.** Have you ever done a study to verify the
 20:42:02 **17** consistency of distribution throughout an entire
 20:42:06 **18** sample?
 20:42:06 **19** **A.** No. On the distribution and consistency
 20:42:10 **20** we haven't done any additional analysis that anybody
 20:42:13 **21** else has ever done in the past for analyzing these
 20:42:17 **22** same type of samples other than we're using a more
 20:42:21 **23** sensitive method.
 20:42:21 **24** **Q.** You were shown an EDS -- EDXA spectra. I
 20:42:25 **25** think it was Exhibit 12 maybe, if you could pull that
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20:42:30 **1** up.
 20:42:41 **2** MR. CIRSCH: You can use this one for now.
 20:42:43 **3** THE WITNESS: Oh, thank you.
 20:42:44 **4** **Q.** (By Mr. Prost) You were asked some
 20:42:45 **5** questions about how at the bottom there's references
 20:42:47 **6** to the different -- what do you call it -- not
 20:42:51 **7** minerals -- the components. You see what I'm talking
 20:42:55 **8** about at the very bottom?
 20:42:59 **9** **A.** In the bottom left-hand corner?
 20:43:01 **10** **Q.** Correct.
 20:43:02 **11** **A.** Yes.
 20:43:02 **12** **Q.** Thanks.
 20:43:03 **13** And you said, I think, that you weren't
 20:43:05 **14** sure if the software automatically pulled up those
 20:43:07 **15** calculations or the ratios, the different numbers; is
 20:43:10 **16** that right?
 20:43:12 **17** **A.** That's correct.
 20:43:13 **18** **Q.** All right.
 20:43:14 **19** **A.** It's not so much the ratios; it's that you
 20:43:17 **20** can do it by elemental percentage or the oxides.
 20:43:20 **21** **Q.** If the software automatically pulled that
 20:43:23 **22** up, your analyst wouldn't delete it before they
 20:43:25 **23** printed that, would they?
 20:43:28 **24** MR. CIRSCH: Object to form.
 20:43:28 **25** THE WITNESS: No. If it is on there for
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346

20:43:30 **1** that particular software, it would be a toggle
 20:43:33 **2** switch they would either turn on or turn off.
 20:43:35 **3** What's more important is we're following
 20:43:36 **4** the ISO method for quantitative EDS where we
 20:43:41 **5** have collected the appropriate count times.
 20:43:44 **6** **Q.** (By Mr. Prost) So the analyst could flip
 20:43:46 **7** a switch, and it could produce those specific
 20:43:49 **8** calculations for us?
 20:43:51 **9** **A.** I don't know that.
 20:43:52 **10** MR. CIRSCH: Object.
 20:43:53 **11** THE WITNESS: It was talked about at
 20:43:55 **12** length earlier. It's not something we routinely
 20:43:57 **13** do or I'm relying on.
 20:44:03 **14** **Q.** (By Mr. Prost) Is there anything else
 20:44:04 **15** that you can think of where there's a switch that you
 20:44:08 **16** could turn off information that the software was to
 20:44:10 **17** automatically put on there?
 20:44:12 **18** MS. O'DELL: Object to form.
 20:44:13 **19** MR. CIRSCH: Objection.
 20:44:13 **20** THE WITNESS: I never stated that the
 20:44:16 **21** software automatically wants to do it and the
 20:44:18 **22** analysts are fighting with the software where
 20:44:21 **23** the software is saying, no, no, I need to do
 20:44:22 **24** this.
 20:44:22 **25** **Q.** (By Mr. Prost) I'll rephrase the
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20:44:23 **1** question.
 20:44:23 **2** Are you aware of any other information
 20:44:25 **3** that is available on the software that is not on
 20:44:29 **4** there or that there's a switch that has turned it
 20:44:32 **5** off?
 20:44:32 **6** **A.** Again, as I discussed earlier some many
 20:44:35 **7** hours ago, that I would have to check, if my client
 20:44:40 **8** asks. And if my client asks for me to check, I'll
 20:44:42 **9** certainly take it under serious consideration.
 20:44:45 **10** MR. PROST: That's all I have for now.
 20:44:46 **11** THE WITNESS: Thank you.
 20:44:47 **12** MR. PROST: Alex, do you have some more
 20:44:49 **13** questions?
 20:44:49 **14** MR. CHACHKES: No.
 20:45:00 **15** (Recess from 8:45 p.m. to 8:55 p.m.)
 20:56:20 **16** EXAMINATION
 20:56:25 **17** BY MS. O'DELL:
 20:56:25 **18** **Q.** Dr. Longo, it's been a very long day,
 20:58:09 **19** but --
 20:58:10 **20** **A.** Yes, ma'am, it has.
 20:58:11 **21** **Q.** It has, I know, for you. I have a few
 20:58:14 **22** questions for you.
 20:58:16 **23** First, before we begin, would you please
 20:58:19 **24** describe your educational background, your background
 20:58:24 **25** and expertise.
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348

20:58:26 **1** **A.** Yes. My educational background is that I
 20:58:31 **2** graduated from the University of Florida with a
 20:58:32 **3** bachelor's of science in microbiology. Went on to
 20:58:35 **4** graduate school in the materials science department
 20:58:38 **5** and graduated in 1983 with a Ph.D. in materials
 20:58:41 **6** science and engineering.
 20:58:42 **7** I started a small company, and we were one
 20:58:45 **8** of the first TEM labs in the country that specialized
 20:58:48 **9** in the analysis of asbestos by transmission electron
 20:58:53 **10** microscopy. Went on to in 1988 open the doors of
 20:58:57 **11** Materials Analytical Services and have been there
 20:59:00 **12** ever since as president.
 20:59:01 **13** While I was at the University of Florida,
 20:59:03 **14** I stayed on while I started that first little company
 20:59:06 **15** and eventually became visiting assistant professor at
 20:59:10 **16** the University of Florida, which I gave up that
 20:59:12 **17** position in approximately 1986 or so.
 20:59:17 **18** Materials Analytical Services grew at some
 20:59:20 **19** point to almost 80 employees, where we specialized in
 20:59:24 **20** everything from analysis of asbestos to materials to
 20:59:29 **21** semiconductors, even doing work for the Department of
 20:59:33 **22** Defense on various types of contracts.
 20:59:37 **23** Since that time, we've probably analyzed
 20:59:41 **24** somewhere in the order of 300,000 or 400,000
 20:59:44 **25** individual asbestos samples. We worked with various
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20:59:49 **1** states and agencies in litigation for property damage
 20:59:52 **2** and developed techniques for reverse engineering
 20:59:56 **3** asbestos-containing products so you could identify
 20:59:57 **4** the manufacturer.
 20:59:59 **5** And I was the expert for the City of
 21:00:02 **6** New York, the State of New York, the State of Hawaii,
 21:00:08 **7** the State of Utah, the City of Chicago, plus the
 21:00:13 **8** entire school system and public buildings in the
 21:00:18 **9** State of Texas.
 21:00:20 **10** We were the referee lab for the
 21:00:23 **11** bankruptcies that involved both U.S. Gypsum,
 21:00:25 **12** W.R. Grace, U.S. Mineral as well -- additionally,
 21:00:29 **13** Turner & Newall's Limpet, as the referee lab where if
 21:00:33 **14** somebody had made a claim, it was up to us to
 21:00:36 **15** validate that the particular sample coming out of a
 21:00:39 **16** particular building was, in fact, that manufacturer's
 21:00:44 **17** product.
 21:00:44 **18** I have published in the peer-reviewed
 21:00:47 **19** literature on the types of testing that we've done
 21:00:50 **20** for both asbestos and nonasbestos type products.
 21:00:55 **21** I have taught at the American Industrial
 21:01:01 **22** Hygiene Association for teaching other industrial
 21:01:04 **23** hygienists the utility of transmission electron
 21:01:06 **24** microscopy specifically for asbestos as well as other
 21:01:09 **25** industrial hygiene applications for particle size
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350

21:01:13 **1** analysis, fugitive type particulates for air quality.
 21:01:20 **2** Our laboratory is one of the few in the
 21:01:23 **3** country that does VOC testing for all the green
 21:01:27 **4** labeling. We're certified to do that by the ISO
 21:01:30 **5** certification.
 21:01:31 **6** Our laboratory also has an FDA laboratory
 21:01:34 **7** number so that we do do pharmaceutical or UPS type
 21:01:40 **8** testing to verify, typically, different chemicals and
 21:01:47 **9** materials that may be emitted or inhaled or injected
 21:01:52 **10** or taken by mouth.
 21:01:54 **11** I've been doing this for almost 30 years,
 21:01:57 **12** and my specialty has been and my research over the
 21:02:01 **13** years has been asbestos-containing products and the
 21:02:05 **14** propensity or not to cause significant exposure
 21:02:08 **15** during the use of those products.
 21:02:11 **16** I was the primary author of the ASTM
 21:02:15 **17** Method for the Analysis of Asbestos Fibers and
 21:02:18 **18** Bundles in Settled Dust, the D2205 committee for ASTM
 21:02:26 **19** standard method, which is probably the most rigorous
 21:02:30 **20** peer-reviewed methodology outside of ISO.
 21:02:33 **21** To get your committee -- your
 21:02:38 **22** subcommittee, your committee, and eventually all
 21:02:42 **23** 40,000 members have the ability for the final time
 21:02:47 **24** when it becomes a standard to vote negative on it.
 21:02:52 **25** One negative vote sends it back. I did that once. I
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21:02:56 **1** won't do it again.
 21:02:57 **2** And I'm a member of various organizations.
 21:03:03 **3** The American Industrial Hygiene Association, the
 21:03:13 **4** microscopy -- materials science microscopy, as well
 21:03:16 **5** as I'm a board certified forensic engineer, which is
 21:03:19 **6** not just pay your money; you actually have to qualify
 21:03:22 **7** from your experience and renew that. I finally
 21:03:26 **8** became a fellow in forensic engineering for what I
 21:03:30 **9** do.
 21:03:31 **10** I guess that's it.
 21:03:32 **11** Q. Have you been qualified as an expert in
 21:03:37 **12** asbestos testing and allowed to testify in federal
 21:03:42 **13** court?
 21:03:42 **14** A. Yes. I've been in federal court many
 21:03:46 **15** times on our asbestos type work, and in fact I've had
 21:03:49 **16** a handful of appellate opinions that the methodology
 21:03:53 **17** we use is sound science. I've been qualified as both
 21:03:57 **18** a materials scientist in the areas of microscopy, in
 21:04:02 **19** the areas of asbestos analysis, in the areas of
 21:04:06 **20** industrial hygiene specifically to do with asbestos.
 21:04:09 **21** And I'm still not a certified industrial hygienist.
 21:04:12 **22** Q. What were you asked to do in this case?
 21:04:15 **23** A. I was asked to determine, using standard
 21:04:18 **24** protocols, peer-reviewed protocols that are normally
 21:04:22 **25** used for the determination of asbestos in materials,
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352

21:04:27 **1** air, bulk samples, water samples, what have you, if
 21:04:31 **2** there was in fact regulated asbestos in these
 21:04:35 **3** containers of Johnson & Johnson Baby Powder, Shower
 21:04:43 **4** to Shower during the time that Johnson & Johnson was
 21:04:47 **5** manufacturing that before they sold it to Valeant,
 21:04:51 **6** Valeant Pharmaceuticals.
 21:04:53 **7** And using standard methodology to
 21:04:56 **8** determine if there was detectable amounts of
 21:04:58 **9** regulated asbestos in these containers, historical
 21:05:02 **10** containers as well as more contemporary containers.
 21:05:08 **11** For this particular case for the MDL we have not
 21:05:13 **12** gotten to the MDL China mines but to verify if it
 21:05:18 **13** was, in fact, present or not.
 21:05:20 **14** Q. Okay. Is the methodology that you used in
 21:05:25 **15** your work in this case supported by the peer-reviewed
 21:05:32 **16** literature?
 21:05:32 **17** A. Yes. We're using standard protocols that
 21:05:34 **18** other scientists in the field of asbestos testing
 21:05:36 **19** have used in the years.
 21:05:38 **20** If there's a publication involving
 21:05:40 **21** asbestos analysis of some sort or asbestos in some
 21:05:44 **22** product or asbestos release, the protocols that we
 21:05:49 **23** use are typically referenced in those peer-reviewed
 21:05:51 **24** publications as well as these are standards, standard
 21:05:55 **25** testing protocols that are accepted across the
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21:05:59 **1** country for these types of analysis and across the
21:06:02 **2** world, especially the International Standards
21:06:05 **3** organization protocols that we use.
21:06:07 **4** **Q.** And is that because of the methodology
21:06:08 **5** that you use and because of the fact that it's
21:06:12 **6** generally accepted in the scientific community, is
21:06:14 **7** the process that you undertook here something that
21:06:18 **8** could be replicated by another scientist or lab?
21:06:24 **9** **MR. PROST:** Objection --
21:06:24 **10** **MR. SILVER:** Objection to form.
21:06:24 **11** **MR. CHACHKES:** Objection. Leading.
21:06:26 **12** **MS. WOODS:** Join.
21:06:26 **13** **THE WITNESS:** Absolutely. They just would
21:06:28 **14** follow the methodology that we have laid out in
21:06:29 **15** the reference protocols, and as long as they are
21:06:32 **16** qualified that they can do this type of
21:06:34 **17** analysis, they should all be able to be
21:06:37 **18** replicated.
21:06:39 **19** **Q.** (By Ms. O'Dell) Let's talk about your
21:06:40 **20** results just very briefly.
21:06:45 **21** What were your find -- let me back up and
21:06:48 **22** ask this question.
21:06:49 **23** What time period did the samples you
21:06:51 **24** tested for your January 2019 report, what time period
21:06:56 **25** does that cover?
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21:08:28 **1** Of the 15 Imerys railroad car samples,
21:08:31 **2** eight were positive, or 53 percent.
21:08:36 **3** Excluding the seven Asian Johnson Baby
21:08:40 **4** Powder containers would give us 65 Johnson Baby
21:08:43 **5** Powder and STS and Imerys railroad car samples
21:08:47 **6** analyzed; 44 were positive, or 68 percent, for
21:08:49 **7** amphibole asbestos.
21:08:51 **8** And then we have a break -- then, of
21:08:53 **9** course, we have the breakdown of each of these
21:08:57 **10** without the Asian.
21:08:58 **11** **Q.** What were the results for fibrous talc?
21:09:04 **12** **A.** The qualitative analysis of fibrous
21:09:10 **13** talc -- let me just jump to the results section.
21:09:16 **14** **Q.** Page 9.
21:09:18 **15** **A.** Thank you. Been a long day.
21:09:21 **16** **Q.** Sure.
21:09:22 **17** **A.** Using the ISO PLM method, found that of
21:09:32 **18** the 56 Italian/Vermont/China source containers that
21:09:36 **19** we analyzed, 55, or 98 percent, contained fibrous
21:09:41 **20** talc. The Blount PLM method showed of the 72, 20
21:09:45 **21** contained fibrous talc.
21:09:47 **22** The TEM analysis showed that -- and I have
21:09:54 **23** that somewhere -- that there was similar
21:09:56 **24** concentration by the heavy density liquid method by
21:10:01 **25** TEM, which is biased against finding fibrous talc,
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354

21:06:58 **1** **A.** The 1960s, the 1970s, the 1980s, the
21:07:03 **2** 1990s, and the early 2000s.
21:07:05 **3** **Q.** What were the sources from which talc was
21:07:08 **4** mined?
21:07:10 **5** **A.** The '60s up until about '67 or so would be
21:07:13 **6** from Italy; from there to approximately 2002, 2003,
21:07:21 **7** it would be from Vermont; and after that it's from
21:07:24 **8** China.
21:07:25 **9** **Q.** What were your findings regarding
21:07:27 **10** regulated asbestos fibers?
21:07:29 **11** **A.** Our results overall for 72 what I'll call
21:07:35 **12** historical containers that include 15 historical
21:07:38 **13** railroad car samples from Imerys, and out of that 72
21:07:44 **14** samples, 50 were positive for regulated asbestos, and
21:07:48 **15** that gives you a percentage of approximately
21:07:50 **16** 66 percent or so.
21:07:52 **17** If we break it down -- and, oh, that
21:07:54 **18** includes seven MDL samples that came from the Korean
21:08:00 **19** mine, or what we call the Asian talc.
21:08:04 **20** If we break it down for the Johnson's Baby
21:08:08 **21** Powder, we analyzed 34 historical samples with Asian.
21:08:13 **22** Out of that 34, 24 were positive, or 71 percent.
21:08:18 **23** We also analyzed 23 historical Shower to
21:08:21 **24** Shower containers that were Johnson & Johnson, and 18
21:08:25 **25** were positive, or 78 percent.
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356

21:10:06 **1** because unless it has iron in it, you'll have the
21:10:09 **2** same density as platy talc.
21:10:12 **3** So, really, the best predictor of fibrous
21:10:16 **4** talc would be the ISO PLM that does not use heavy
21:10:20 **5** density liquid, and most all the samples except for
21:10:23 **6** one that we tested had it in there.
21:10:42 **7** **MS. O'DELL:** Nothing further, Doctor.
21:10:43 **8** Thank you.
21:10:45 **9** **THE WITNESS:** Thank you.
21:10:47 **10** **MR. CHACHKES:** Nothing more here.
21:10:50 **11** **FURTHER EXAMINATION**
21:10:52 **12** **BY MR. PROST:**
21:10:52 **13** **Q.** Just one follow-up.
21:10:53 **14** You're talking about the results,
21:10:54 **15** Dr. Longo. Turn to page 6 of your report.
21:10:58 **16** You talk about how the analysis of 34
21:11:01 **17** historical Johnson's Baby Powder containers you
21:11:06 **18** determined were 71 percent positive.
21:11:09 **19** And then number 2, you say the analysis of
21:11:11 **20** 22 historical Shower to Shower, or 77 percent,
21:11:16 **21** positive; but the analysis of the Imerys 15 railroad
21:11:19 **22** car samples were only 53 percent positive.
21:11:23 **23** Do you have an explanation for the
21:11:28 **24** 25 percent difference there between the Imerys
21:11:31 **25** railroad car samples and the finished product
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21:11:34 1 samples?
 21:11:34 2 A. Yes, sir.
 21:11:36 3 Q. What is that?
 21:11:36 4 A. Only eight were positive out of the 15.
 21:11:40 5 Q. Do you have an explanation for why there
 21:11:43 6 would be such a discrepancy in the positive findings
 21:11:46 7 using your methodology?
 21:11:47 8 MS. O'DELL: Object to the form.
 21:11:48 9 THE WITNESS: I don't look at it as a
 21:11:49 10 discrepancy. We call them like we see it. So
 21:11:52 11 if it's only eight out of the 15, that's all we
 21:11:55 12 saw.
 21:11:57 13 Q. (By Mr. Prost) And you expect that if the
 21:11:58 14 raw talc supplied had a certain percentage of
 21:12:02 15 asbestos, you would see the same percentage in the
 21:12:04 16 finished product?
 21:12:05 17 MS. O'DELL: Object to form.
 21:12:07 18 THE WITNESS: No, I wouldn't expect to see
 21:12:09 19 the same percentage, usually, because you're --
 21:12:11 20 flotation, you're using various methods. And we
 21:12:16 21 don't have a lot of data from the 1990s. So
 21:12:23 22 there may be, you know, a difference in the two.
 21:12:26 23 But we don't have enough data to make that yet,
 21:12:29 24 to make that jump on why one versus the other.
 21:12:33 25 Q. (By Mr. Prost) So your opinion as to what
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358
 21:12:35 1 could explain the difference is that there's a
 21:12:38 2 flotation method and it's a small sample size?
 21:12:41 3 A. No. I never said that. I said there is a
 21:12:44 4 processing on it, but we don't have a lot of samples
 21:12:46 5 from 1990 and 2000. And, you know, we'll just have
 21:12:51 6 to see as we go forward with additional testing.
 21:12:55 7 Q. So the smaller the sample size, the less
 21:12:57 8 reliable the findings, you would agree?
 21:13:00 9 A. No --
 21:13:00 10 MS. O'DELL: Object to form.
 21:13:00 11 THE WITNESS: I don't agree that the
 21:13:02 12 findings are not reliable at all. They are
 21:13:03 13 reliable. Why there's 53 percent versus some of
 21:13:06 14 the others, you know, hopefully we can answer
 21:13:10 15 this question some day. Or we get a larger
 21:13:17 16 sample size and see if there is actually a
 21:13:17 17 difference.
 21:13:17 18 MR. PROST: No further questions.
 21:13:22 19 MR. SILVER: Hold on. Yes, we do. We
 21:13:23 20 have one more. We can feed it to him or just
 21 21 ask him.
 22 THE WITNESS: Why don't you just go ahead
 21:13:27 23 and ask me.
 24 ///
 25 ///
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21:13:27 1 EXAMINATION
 21:13:27 2 BY MR. SILVER:
 21:13:27 3 Q. Dr. Longo, in your report you characterize
 21:13:29 4 the Imerys samples as railcar samples. Where did you
 21:13:32 5 get that description from?
 21:13:33 6 A. It was on the -- I believe it was right on
 21:13:36 7 the containers as well as from the MDL for the chain
 21:13:40 8 of custodies that they sent.
 21:13:42 9 Q. And sitting here today, you believe that
 21:13:43 10 all those samples were actually railcar samples?
 21:13:47 11 MS. O'DELL: Object to the form.
 21:13:48 12 THE WITNESS: I don't know if they all
 21:13:49 13 were. We'd have to look at the chain of
 21:13:51 14 custodies. But I think there were one or two
 21:13:53 15 that said something different than railroad car
 21:13:57 16 samples, but I just characterized them all as
 21:14:00 17 railroad car samples.
 21:14:01 18 MR. SILVER: Thank you. No further
 21:14:03 19 questions.
 21:14:09 20 (Deposition concluded at 9:14 p.m.)
 21 (Pursuant to Rule 30(e) of the Federal
 22 Rules of Civil Procedure and/or O.C.G.A. 9-11-30(e),
 23 signature of the witness has been waived.)
 24 (Original transcript sent to Mr. Frost.)
 25
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360
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Exhibit 6

Serous Ovarian Cancer Caused by Exposure to Asbestos and Fibrous Talc in Cosmetic Talc Powders—A Case Series

Joan E. Steffen, BA, Triet Tran, BA, BS, Muna Yimam, BS, Kate M. Clancy, Tess B. Bird, DPhil, Mark Rigler, PhD, William Longo, PhD, and David S. Egilman, MD, MPH

Objective: Asbestos is a known cause of ovarian cancer. We report 10 cases of serous ovarian cancer among users of Johnson & Johnson (J&J) asbestos-containing “cosmetic” talc products. **Methods:** We conducted an asbestos exposure assessment during talc application and analyzed surgical tissues and talc containers for asbestos and talc. **Results:** Talc was found in all cases and tremolite and/or anthophyllite asbestos was found in 8/10 cases. The asbestos fibers found in the “cosmetic” talc containers matched those found in tissues. We estimated inhaled asbestos dose ranged from 0.38 to 5.18 fiber years. **Conclusion:** We provide evidence that the inhaled dose of asbestos/fibrous talc from “cosmetic” talc use causes ovarian cancer. The unique combination of the types of asbestiform minerals detected in cancerous tissue and “cosmetic” talc is a fingerprint for exposure to asbestos-containing talc.

Keywords: asbestos, baby powder, cosmetics, Johnson & Johnson, ovarian cancer, talc

Known amongst oncologists as a “silent killer,” ovarian cancer is the leading cause of death from all gynecologic cancers and the fifth leading cause of cancer-related deaths among women in the United States.¹ The American Cancer Society estimates that about 22,000 American women will be diagnosed and 13,850 will die of the disease in 2019.² In 2010, the agency determined that perineal talc powder use is possibly carcinogenic to humans (group 2b).³

Epidemiological studies have examined the relationship between perineal talc use and ovarian cancer. In a 1982 case-control study, Cramer et al⁴ first reported an association between genital talc use and ovarian cancer. At least 32 subsequent epidemiologic studies have examined the association between talc

powder use and ovarian cancer.^{5–36} High-grade serous carcinoma (HGSC) is the most common form of ovarian cancer and the type of ovarian cancer that has been most consistently associated with perineal use of cosmetic talc products.^{6–8,10,12,14,15,24,27,29,32,33,36,37} Meta-analyses have consistently shown an increased risk of HGSC of about 1.3 for perineal talc use.^{18,38–40}

Asbestos exposure by inhalation occurs during cosmetic talc use.^{41,42} International Agency for Research on Cancer (IARC) concluded in 2009 that asbestos was a group 1 ovarian carcinogen.^{43,44} Dr Wyers’ first reported a case of ovarian cancer in a woman with asbestosis in 1949.⁴⁵ Twenty-seven epidemiologic studies have since examined the relationship between asbestos exposure and ovarian cancer.^{46–72} Nine of these 27 studies report a statistically significant elevation in ovarian cancer risk.^{46–48,51,61,62,68,69,71} Epidemiologic findings have demonstrated consistency in different populations: studies of asbestos and ovarian cancer have shown a statistically-significant association among women in different countries with exposures to different types of asbestos fibers and in various occupational and environmental settings.^{46–48,51,61,62,68,69,71} Epidemiologic research also suggests a dose-response relationship for asbestos and ovarian cancer when comparing low-exposure and high-exposure subgroups.^{47,72} Camargo et al⁷³ performed a meta-analysis of 18 cohort studies of occupational asbestos exposure and reported a pooled standardized mortality ratio (SMR) for ovarian cancer of 1.77 (95% confidence interval [CI], 1.37–2.28).

Epidemiologic studies of talc and ovarian cancer have generally accepted representations by talc mining and manufacturing companies that consumer talc has been asbestos-free since 1976.^{6–8,10,12,14,15,24,25,27,29,32,36} However, studies show that

From the Never Again Consulting, Attleboro, Massachusetts (Ms Steffen, Mr Tran, Ms Yimam, Ms Clancy, Dr Bird, Dr Egilman); College of Engineering and Mines (student), University of Alaska – Fairbanks, Fairbanks, Alaska (Ms Clancy); Mellon Postdoctoral Fellow, Wesleyan University, Middletown, Connecticut (Dr Bird); Materials Analytical Services LLC, Suwanee, Georgia (Dr Rigler, Dr Longo); Department of Family Medicine, Warren Alpert Medical School, Brown University, Providence, Rhode Island (Dr Egilman).

Funding: Plaintiffs’ attorneys in litigation against Johnson & Johnson (Ingham et al vs Johnson & Johnson et al) paid for tissue analysis for talc and asbestos in patient tissues. They also paid for travel costs and time spent examining and interviewing patients. There was no outside funding for work on this manuscript.

Institution and Ethics approval and informed consent: There was no requirement for ethics review or institutional review board approval because this research was not experimental and was originally conducted pursuant to a lawsuit. Informed consent was obtained from all living patients. For one deceased patient (Case No. 8), consent was obtained from the surviving spouse. For the remaining two deceased patients (Case No. 4 and Case No. 9), authors relied only on public information revealed during court proceedings.

Disclosure (Authors): T.T., J.S., K.C., M.Y. and T.B. work for Dr Egilman, who served as an expert witness in litigation at the request of people who were injured as the result of using talcum powders. Mr Tran, Ms Steffen, Ms Clancy, Ms Yimam, and Dr Bird were not compensated by law firms for work on this paper and the lawyers for the injured plaintiffs did not review this paper and had no input into the content of the paper.

Dr Egilman, Dr Rigler and Dr Longo report payments from lawyers related to the submitted work. All serve as expert witnesses in litigation at the request of people who were injured as the result of using talcum powders; plaintiffs’ lawyers paid for the patient examinations taken by Dr Egilman as part of his expert witness work.

Dr Rigler and Dr Longo originally performed the tissue analysis for talc and asbestos as part of their expert witness work and were paid by plaintiffs’ lawyers for their work. Dr Egilman has also served as an expert witness at the request of companies who have been sued for exposure to asbestos from their mines or products. They were not compensated for work on this paper and the lawyers for the injured plaintiffs did not review this paper and had no input into the content of the article.

Disclaimer: Historic testing of talc for asbestos is limited in methodology and scope. Courts and plaintiff lawyers have agreed, without the knowledge or permission of their clients, to keep secret some of the documents reported here; these documents became public during court proceedings over the objections of J&J and Imerys. Many documents remain sealed.

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Clinical significance: We provide evidence that asbestiform minerals present in “cosmetic” talc causes ovarian cancer. We provide an estimate of asbestiform minerals inhaled per talc application and cumulative lifetime exposure. The unique combination of asbestiform minerals detected in cancerous tissue and “cosmetic” talc is a fingerprint for exposure to asbestos-containing talc.

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consumer talc contains asbestos and a review of the world's largest talc producers records indicated that talc mines contained asbestos, that asbestos cannot be removed from talc, and that talc used in cosmetics was not asbestos-free.^{41,74–82} Case control and cohort studies of talc use and ovarian cancer have not differentiated inhalation and perineal talc exposures, and have not considered inhalation exposures in their analyses; this has contributed to misclassification of exposed cases and inaccurate dose–response assessments.⁴² In addition, industry marketing studies from the 1970s indicate that up to 85% of women used talc powders thus many “controls” were probably exposed to asbestos containing talcs.^{42,83}

We report 10 cases of serous ovarian cancer among users of asbestos-containing Johnson & Johnson (J&J) cosmetic talc products. Unlike most previous studies on talc and ovarian cancer, we focused on inhalation exposures to asbestos during various talc uses and not perineal exposure.^{4,6,12,40} We measured inhalation exposures during perineal application of asbestos-containing cosmetic talc. Based on exposure histories, we estimate the dose of inhaled asbestos and the increase in ovarian cancer risk for each case. Our case series also includes tissue analysis for talc and asbestos in both product and cancer tissue. By synthesizing current knowledge of asbestos carcinogenicity and evidence of asbestos in consumer talc products, our case series provides novel insight into the link between cosmetic talc use and ovarian cancer.

MATERIALS AND METHODS

We report 10 cases of serous ovarian cancer in women who primarily or exclusively used a variety of J&J cosmetic talc products including Johnson's Baby Powder (JBP), Shower to Shower (STS), and STS Shimmer.⁸⁴ These cases were identified among a group of 22 plaintiffs in *Ingham et al versus Johnson & Johnson et al*. All plaintiffs were diagnosed with ovarian cancer after exposure to J&J cosmetic talc products and transmission electron microscope (TEM) tissue analysis for talc and asbestos was performed for 10 of these plaintiffs. We only report on the 10 plaintiffs for whom TEM tissue analysis was completed.

There was no requirement for ethics review or institutional review board approval because this research was not experimental and patients participated voluntarily in conjunction with a lawsuit. Informed consent for publication was obtained from all living patients. One patient (Case No. 8) passed away after her exposure history was collected but before consent for publication was obtained. In this case, consent was obtained from the surviving spouse. For the remaining two deceased patients (Case No. 4 and Case No. 9), authors relied only on public information revealed during court proceedings. For the exposure assessment, the researcher wore a respirator and was decontaminated post-assessment. The researcher was not exposed to any risk, required to reveal personal information or subjected to specimen collection. The assessment did not meet the requirements to necessitate Institutional Review Board (IRB) approval.⁸⁵

Patient Histories

Medical histories, exposure histories (history questionnaire attached as Appendix 1, <http://links.lww.com/JOEM/A685>), and physical examinations were collected for all living patients (8/10 cases). Exposure histories included questions about talc powder use and other sources of asbestos exposure. We analyzed the frequency and duration of talc uses for each case. For the two deceased patients (Case No. 4 and Case No. 9), a rough exposure history was compiled from the testimony of relatives who were familiar with each patient. Available medical records were also reviewed for all cases.

Exposure Assessment—Perineal Application

The exposure assessment was completed in a 15" × 15" × 8' room with appropriate negative asbestos airflow technology. The

experiment was videotaped using two Sony Model HDR-CX900 cameras with alternating Tyndall and standard lighting. (See Appendix 2, <http://links.lww.com/JOEM/A686>.) Area and background samples were collected using four high-volume area sampling pump stations set up 5" to 6" from the talc user; these pump stations used 25 mm air cassettes containing 0.8 μm pore size mixed cellulose ester (MCE) filters with 5.0 μm backing pads and were calibrated to run at 10 L/min. Personal samples were collected using four low-volume pumps affixed to the talc user with the cassettes adjusted to be in the breathing zone of the investigator; the “personal” pumps were calibrated to 2.5 L/min. During the experiment, air samples were collected for 5 minutes from all sources.

A researcher wearing personal protective equipment and “personal” air pumps used a metal container of JBP for the experiment. Based on JBP advertisements featuring product images, we estimated that the JBP used in this test had been manufactured sometime in the 1950s and sourced from the Val Chisone mine.^{86,87} (See Appendix 3, <http://links.lww.com/JOEM/A688> for images of JBP product tested and for full written report on exposure assessment.) J&J used this mine source from 1946 until 1968 and 1980 to 1981.^{86–88} From 1969 to 2003, J&J used Vermont talc in their powder products and later switched to Chinese talc.^{42,89} Using *t* test analysis, the asbestos content (fibers per gram) in all the bottles tested were statistically comparable across these three talc sources. (See Appendix 4, <http://links.lww.com/JOEM/A689>)

The JBP can was weighed before the experiment using a Fisher Scientific balance. The researcher wore a bikini bottom over an inner pair of boxer briefs and sat on a chair in the middle of the room for the experiment. To simulate perineal talc application, the researcher shook the talc powder into his hand twice and then rubbed the powder into the upper leg area. This was repeated for the other leg. Then, the researcher stood, pulled the bikini bottom down and away from the body, and applied two squeezes of talc powder into the bikini bottom. The researcher released the briefs and sat down on the chair for the remainder of the study. The metal container of JBP was weighed again following the study. After the study, two field blanks were opened inside the study room.

A total of four background samples, four personal samples, and four area samples were collected along with two field blanks. All 12 air samples were analyzed for asbestos by the National Institute Occupational Safety and Health (NIOSH) 7400 phase contrast microscopy method using “A” counting rules and by the NIOSH 7402 TEM method.^{90,91} For TEM analysis, amphibole asbestos fibers or bundles with substantially parallel sides and an aspect ratio of 3:1 or greater, at least longer than 5.0 μm in length and greater than 0.25 μm were counted as per NIOSH 7402 asbestos structure sizing rules.⁹¹ The four personal air samples were also analyzed by the NIOSH 7402 method for fibrous talc particles.⁹¹ The two field blanks were analyzed for asbestos by phase contrast microscopy and TEM in accordance with NIOSH 7400 and NIOSH 7402.^{90,91}

Dose Calculations

For each case, we calculated asbestos dose in environmental fiber years (for consistency with the Environmental Protection Agency (EPA) risk assessment model) and in total fibers inhaled (to account for changes in respiratory intake in infancy vs. adulthood).⁹² We used the asbestos dose in environmental fiber years to calculate the excess risk. (See section on Dose–Response Risk Assessment.)

We calculated total asbestos dose based on the four most common usages of J&J talc powder reported among the 10 cases: perineal application (10/10), upper body powdering (9/10), exposure as an adult during diapering (8/10), and exposures as an infant during diapering (7/10). For each of these scenarios, we incorporated the intensity of the exposure (f/cc), duration of each exposure (minutes), and total number of applications (from exposure

histories) to calculate the dose. Although we did not adjust for latency, we excluded exposures that occurred after ovarian cancer diagnosis. Fibrous talc exposures from powdering were excluded from our calculations except exposure from baby diapering.⁴¹ Dement et al⁹³ did not differentiate type of fiber detected.

For perineal powdering exposures, we relied on measurements from our exposure assessment. (See above.) Air samples were collected over the course of 5 minutes in this test.

For upper body powdering, we used Gordon et al⁴¹ measurements for shaker application of cosmetic talc powder to the underarm, shoulder, and upper arm area. Gordon et al⁴¹ used Cashmere Bouquet, which used the same Italian mine source as J&J (Val Chisone) from 1940 until 1992.^{94,95} Gordon et al⁴¹ found that users were exposed to 1.9 f/cc of asbestos fibers over the course of 5 minutes.⁴¹

For exposures during diapering, Dement et al⁹³ from NIOSH found that an adult is exposed to 2.2 f/cc of fibrous material and that a baby is exposed to 1.8 f/cc over the course of two minutes. When subjects reported that their parents had used talc on them during diaper changes as an infant, we relied on diaper changing norms to estimate infant exposures. United States market research and survey data show that diaper changes typically occur 8 to 10 times per day for infants (0 to 6 months) and 4 to 6 times per day for toddlers (6 to 24 months).^{96–98} Diaper changing frequency in the U.S. also changed over time: the average number of diaper changes per day over the first two years of life dropped from eight times per day in the 1960s to 5 to 6 times per day by the 1980s due to improvements in disposable diapers and reduction in cloth diaper use.^{97,99} Since all of the women in our series were born prior to 1975, we assumed that diaper changes occurred eight times per day for two years.

We calculated the dose for each case in fiber years ($\frac{f}{cc} \times \text{year}$) using the same conversions as Anderson et al.¹⁰⁰ For consistency with the EPA dose–response curve used for our risk assessment, we calculated the total duration of exposure based on a continuous, 24-hour exposure period (525,600 min/yr) until date of diagnosis.⁹²

Formula 1:

Formula to estimate inhalation exposure from talc application:

$$\begin{aligned} &\text{Asbestos exposure in } \frac{f}{cc} \\ &\quad \times \frac{\text{duration of each exposure} \times \text{total number of applications}}{525,600 \text{ min per year}} \\ &= \text{total dose in } \frac{f}{cc} \cdot \text{years} \end{aligned}$$

We also calculated the total number of asbestos fibers inhaled in each case. For adults, we used the National Research Council (NRC)'s estimate of "an annual inhaled air volume of 7,300 m³," and formula to convert the dose from fiber years to total fibers.¹⁰¹ We relied on measurements of infant lung volume from Hall¹⁰² and on median infant respiratory rates calculated by Fleming et al¹⁰³ to estimate the total inhaled air volume for infants from age 0 to 2. Using time-weighted averages for tidal volume and respiratory rate, we calculated that infants breathed 11,025,072,000 ccs in the first 2 years of life, or 5,512,536,000 ccs per year on average.

Formula 2:

Formula to convert adult exposures to total fibers based on NRC (1984):

$$\begin{aligned} &\left[\text{total does in } \frac{f}{cc} \times \text{years} \right] \times \frac{7,300,000,000 \text{ cc}}{\text{year}} \\ &= \text{Total number of asbestos fibers} \end{aligned}$$

Formula 3:

Formula to convert infant exposures to total fibers based on Hall¹⁰² and Fleming et al¹⁰³:

$$\begin{aligned} &\left[\text{total does in } \frac{f}{cc} \times \text{years} \right] \times \frac{5,512,536,000 \text{ cc}}{\text{year}} \\ &= \text{Total number of asbestos fibers} \end{aligned}$$

We added together adult and infant exposures to calculate the exposures in total number of asbestos fibers. See Appendix 5, <http://links.lww.com/JOM/A690> for the full dose calculations for each case.

Dose–Response Risk Assessment

We developed a method to apply the EPA dose–response curves for inhaled asbestos and mesothelioma risk to ovarian cancer risk.⁹² First, we examined the EPA dose–response table for mesothelioma from environmental asbestos exposure (24-hours, 365 days per year).⁹² Utilizing the EPA dose–response estimates, we extrapolated a formula for the line of best fit for mesothelioma risk.

We then identified studies that reported mesothelioma and ovarian cancer rates in the same cohort and calculated comparative risk of mesothelioma versus ovarian cancer for each study.^{58,62,63,68,71} (See Table 1.)

Using these studies, we calculated the geometric mean comparative risk of contracting mesothelioma versus ovarian cancer from the same asbestos exposures. We applied this comparative risk to the line of best fit for mesothelioma based on the EPA dose–response data to determine a formula for risk of ovarian cancer.

The subjects of the EPA occupational exposure study were entirely men.⁹² Since women are more susceptible to cancer from asbestos exposure, we used Lacourt's¹⁰⁴ findings comparing the mesothelioma odds ratio (OR) in men versus women with the same exposures to adjust the formula for the increase in cancer risk for women. At total doses more than 0 to 0.1 fiber years, women were 1.725 times more likely to have mesothelioma than men.¹⁰⁴ At total doses more than 0.1 to 1 fiber years, women were 2.855 times more likely to have mesothelioma than men.¹⁰⁴ We applied these ratios to the EPA dose curve calculated to obtain a better estimate of the ovarian cancer dose–response in women.

The resulting dose–response curve for inhaled asbestos and ovarian cancer is shown in Fig. 1. We used each case's asbestos dose estimate in fiber years to identify their relative lifetime risk of developing ovarian cancer along the dose–response curve. We then compared each case's risk of contracting ovarian cancer due to inhaled asbestos exposure to the expected incidence of ovarian cancer for those without asbestos exposure: 11.4 per 100,000 from the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) Program.¹⁰⁵

Tissue Analysis for Asbestos and Talc

Samples from a combination of the left and right ovaries, left and right fallopian tubes, and left and right pelvic lymph nodes were obtained from the hospital for each of the 10 patients. Tissues were analyzed to identify and quantify talc and asbestos content in the tissue.

For tissue analysis, a small portion of the tissue in each block was removed with a clean razor blade and placed in a pre-weighed 20 to 30 mL borosilicate glass vial. The vial was filled with 10 mL of filtered extraction solvent (hexane) and placed in a 60 °C water bath. The filtered extraction solvent was replaced every 20 minutes for a total of three changes. After the last extraction solvent change, two changes of filtered ethanol (10 mL, each) 10 minutes each were performed, then the tissue piece(s) were dried at 110 to 120 °C.

TABLE 1. Studies with Both Mesothelioma and Ovarian Cancer Rates in the Same Cohort and Calculated Comparative Risk of Mesothelioma to Ovarian Cancer in Female-Only Cohorts

Study	Mesothelioma Risk (SMR)	Ovarian Cancer Risk (SMR)	Comparative Risk M/OC
Loomis 2009	10.92	1.23	8.88
Magnani 2008	51.49	2.27	22.68
Pira 2016	51.3	3.03	16.93
Wang 2013	166.67	7.69	21.67
Wilczyńska 2005	22.67	1.76	12.88
Geometric mean of comparative risk			15.69

Tissue samples were digested with 15 to 30 mL of filtered sodium hypochlorite (appx. 8.0% bleach). After digestion, the remaining digested material was filtered through a 25 mm, 0.4 μ m polycarbonate (PC) filter. The filter containing the tissue residue was dried and subsequently prepared for TEM examination.

A paraffin control sample (wax blank) was obtained by dissolving a known quantity of the paraffin blocks (devoid of tissue) in 10 mL of filtered extraction solvent and the dissolved solvent/wax solution was then filtered onto a 25 mm, 0.4 μ m PC filter. The filter was allowed to dry and then prepared for TEM analysis. A process blank (sample vial) was prepared in the same manner and followed the wax blank and tissue sample vials through all steps.

For TEM analysis, 100 to 300 grid openings were analyzed for all asbestos and talc structures at a magnification of between 4000 and 20,000 \times . As per standard TEM analysis protocols, asbestos fiber/bundle identification was done by morphology (substantially parallel sides and length to width ratio of at least 5:1), length (greater than 0.5 μ m in length), selected area electron diffraction (SAED), and energy dispersive X-ray spectroscopy (EDS).^{106–112} Talc structures (platy and fibrous) were identified morphologically, by selected area diffraction (SAED), and energy dispersive spectroscopy (EDS).

RESULTS

Exposure Assessment

Total weight used during the application process was 4.05 g of talc powder. For the five minute sampling time, the average total fiber exposure was 4.52 f/cc (5.86, 4.38, 3.85, and 3.98 f/cc), the average asbestos exposure was 2.57 f/cc (4.51, 1.88, 2.07, and 1.81 f/cc), and the average talc exposure was 1.95 f/cc (1.35, 2.50, 1.78, and 2.16 f/

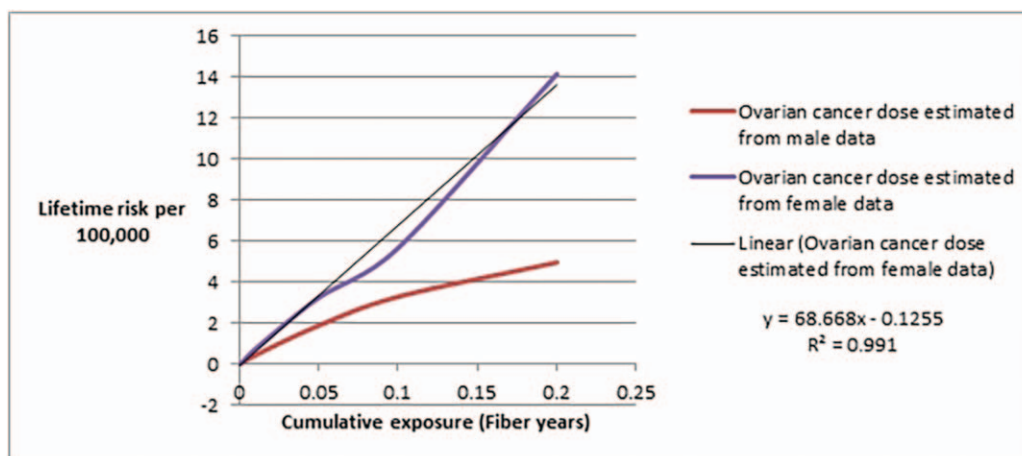
cc) for the talc user personal samples. For area samples, the average total fiber exposure was 0.41 f/cc (0.52, 0.28, 0.42, 0.40 f/cc), the average asbestos exposure was 0.2 f/cc (0.31, 0.20, 0.13, and 0.16 f/cc) and the average fibrous talc exposure was 0.19 f/cc (0.13, 0.08, 0.29, and 0.24 f/cc). The type of asbestos fiber identified in all samples was tremolite asbestos. No fibers were detected in the background samples or field blanks. The complete exposure assessment report, including count sheets and fiber images, is available as Appendix 3, <http://links.lww.com/JOM/A688>.

Dose Calculations and Risk Assessment

Results for dose calculations, risk assessment, and tissue analysis are summarized in Table 2. See Appendix 5, <http://links.lww.com/JOM/A690> for complete past medical history, history of present illness, other ovarian risk factors, exposure history, and dose calculations for each case.

STS was comprised of talcum powder mixed with cornstarch. The STS products contained between 80% and 100% talc sourced from the same mines as JBP.⁸⁴ Only four cases used these products for brief or unknown periods of time. Case No. 3 reported infrequent use of unidentified facial make-up powder, and Case No. 6 reported infrequent use of generic store-brand talcum powder. We could not calculate exposures for the brief use of these unknown products.

All cases had pathologically confirmed serous ovarian cancer. Age at diagnosis ranged from 41 to 78 years, with a mean age at diagnosis of 51.1 years and median age at diagnosis of 50 years. By contrast, the median age of ovarian cancer diagnosis in the United States is 63 with most cases occurring in women aged 55 to 64. Seven of 10 cases tested negative for BRCA mutations; two cases were never tested (No. 2 and No. 5), and one case (No. 8) tested positive for BRCA2 variant L771 V.

**FIGURE 1.** Ovarian cancer dose response (adjusted for difference in female mesothelioma risk).

All cases reported perineal talc application; the frequency of perineal powdering with talc ranged from once per day to 10 times per day and the duration ranged from 24 years to 47 years. Nine of 10 cases reported upper body powdering with talc ranging from 1 to 5 times per day and lasting from 20 to 47 years. Seven of 10 cases reported that their parents used talc powder on them during diaper changes and eight of 10 cases used talc powder during diapering. The total asbestos dose from talc powder use ranged from 2,774,000,000 to 37,742,501,440 asbestos fibers (0.38 to 5.18 fiber years) and the average dose was 9,308,551,008 asbestos fibers (1.28 fiber years). No other known asbestos exposure was identified for any of the cases. Based on EPA dose–response estimates, the risk of developing ovarian cancer due to inhaled asbestos exposure was calculated to be 2.3 to 31.1 times greater in these cases compared with baseline risk for ovarian cancer.¹⁰⁵ On average, the risk of ovarian cancer increased 7.7-fold among these cases.

Tissue Analysis

Talc and/or asbestos was identified in the tissue from all cases. Platy talc was found in 9/10 cases (90%) with an average concentration of 264,487 structures per gram (s/g) (range, 0 to 2,057,640 s/g). Fibrous talc was found in 8/10 cases (80%) with an average concentration of 5878 s/g (range, 0 to 21,545 s/g). Tremolite asbestos was found in 6/10 cases (60%) with an average concentration of 6488 s/g (range, 0 to 22,000 s/g). Anthophyllite asbestos was found in 4/10 cases (40%) with an average concentration of 2393 s/g (range: 0 to 12,000 s/g). Ferro-anthophyllite asbestos was also identified in two cases (20%), winchite and richterite asbestos were identified in one case (10%), and crocidolite asbestos was identified in one case (10%). Two tremolite structures with aspect ratios less than 5:1 were observed in one case, but were not counted as asbestos.

In the “possible fallopian tube B” tissue of Case No. 2, a cluster measuring $20.0 \times 16.0 \mu\text{m}$ was identified composed of 36 counted talc plates, two fibrous talc structures, and one tremolite fiber. (See Fig. 2.)

DISCUSSION

This case series identified asbestos and/or talc in the tissue of 10 women diagnosed with serous ovarian cancer and exposed to J&J cosmetic talc products. Prior to their ovarian cancer diagnosis, these women were exposed to as much as 2,774,000,000 to 37,742,501,440 asbestos fibers (0.38 to 5.18 fiber years) due to their use of J&J cosmetic talc products. In all reported cases, asbestos exposures due to J&J talc use resulted in a substantial increase in ovarian cancer risk (2.3 to 31.1) based on our model. Early median age of diagnosis (50 in this case series vs. 63 nationally), and the EPA dose response table, indicates that asbestos exposure in infancy may cause ovarian cancer to occur sooner than it would have occurred absent this exposure.^{92,105}

The asbestos type found in the perineal talc use inhalation exposure assessment (tremolite asbestos) and the predominant asbestos types identified in these tissue samples (tremolite and anthophyllite asbestos) matched the fiber types previously identified in cosmetic talc products and in talc mines.^{41,74,75,77–81} (See Table 3.) Researchers have previously identified anthophyllite asbestos in Johnson’s Baby Powder (by TEM analysis),⁷⁹ amphibole needles and fibers in baby powder sourced from Vermont,^{76,77} and tremolite asbestos fibers in commercial talc produced prior to 1975 from J&J’s talc source in Val Chisone, Italy.^{81,89}

In 2017, a bundle of tremolite asbestos fibers was found in a bottle of JBP purchased by Case No. 3 in 2014. (See Appendix 6, <http://links.lww.com/JOM/A691> for full purchase report.) Tremolite asbestos was also identified in Case No. 3’s right pelvic lymph node. (See Fig. 3.) Winchite and richterite asbestos were found in the tissue in one case. However, richterite was called sodium

tremolite prior to 1978.¹¹³ Winchite is found in talc from the Allamoore, Texas mine, and may have contaminated J&J Italian talc processed at the same plant in the 1970s.^{114–118} Similarly, Transite pipes present in Royston Plant for J&J baby products may have contaminated J&J talc with crocidolite.^{119,120} Furthermore, Colgate acknowledges that there is crocidolite in some talc.¹²¹

The most common structures identified by tissue analysis (platy talc, fibrous talc, tremolite and anthophyllite asbestos) strongly indicate talc powder as the source of asbestos exposure in these cases. Tremolite asbestos has had minor commercial production in India and Italy and is mainly found as an accessory mineral in talc, vermiculite, and chrysotile.^{122–124} Anthophyllite asbestos, which occurs as an accessory mineral in talc and chrysotile, has also had limited commercial use.^{123–125} Anthophyllite and tremolite together account for less than 1% of asbestos production and consumption worldwide.¹²⁴

None of the cases reported in this series had any known history of alternative asbestos or vermiculite exposure and no chrysotile or vermiculite was found in any of the tissue samples. Churg and Warnock¹²⁶ performed a population study of lung asbestos and noted that “. . . in women a major source [of asbestos fibers] may be cosmetic talc, which is often contaminated with anthophyllite and tremolite.” Finkelstein’s¹²⁷ analysis of mesothelial tissue found a statistically significant association for tremolite detected with talc in tissue. This association was higher for women, 82% of whom had talc in their tissue compared with 68% of men.¹²⁷ The increased use of talcum-based cosmetics by women, and the similar fiber type combination is a fingerprint of cosmetic talc migrating to the pelvic organs. The combination of talc with tremolite and/or anthophyllite asbestos, as identified by Finkelstein¹²⁷ and the 10 cases reported here, are a fingerprint for exposure to asbestos-containing talc.^{128–130} (Appendix 7, <http://links.lww.com/JOM/A692>: a chart of fibers detected in J&J compared with fibers in tissue). These results indicate that perineal use can result in important inhalation exposure to asbestos, which is an accepted route of transmigration to the peritoneum and ovary.¹³¹

Our exposure assessment found that cosmetic talc users can be exposed to 2.57 f/cc asbestos in the breathing zone during perineal talc application; this finding was generally in agreement with previous studies of asbestos exposures during talc use.^{41,93} The bottle of JBP used in this exposure assessment was tested by TEM which detected 15 million fibers per gram. Further analysis found asbestos in 56/90 JBP bottles with a range of 4400 to 15,100,000 asbestos fibers per gram (appendix 4, <http://links.lww.com/JOM/A689>). For comparison, Gordon et al⁴¹ conducted examination on 50 samples of a single brand of cosmetic talc, sourced from either Montana, North Carolina or Val Chisone. Gordon et al⁴¹ found a range of 1840 to 200 million asbestos fibers per gram. Asbestos is not evenly distributed in talc ores and sampling cannot be completely representative of exposure.^{88,132}

Gordon et al⁴¹ selected a bottle with 18 million asbestos fibers per gram for the inhalation study. The results for Gordon’s et al.’s⁴¹ simulation of body powdering, 1.9 f/cc, is comparable to our findings of 2.57 f/cc asbestos exposure per application. Application of cosmetic talc varies greatly, including differences in product, application time, grams per use, and location of application. In addition, talc is mined and milled prior to sale, potentially modifying fiber size or dispersing asbestos unequally in finished cosmetic talc product.¹³³ Talc was sourced from various mines and processing methods changed over time, adding to the variability of asbestos content in talc-containing cosmetic products. However, our findings of an asbestos fingerprint in the tissue reveal that regardless of the dose, exposure to talc-containing cosmetic products is sufficient to cause ovarian cancer.

We relied on NIOSH measurements by Dement et al⁹³ to calculate exposures during diapering, however these measurements did not account for airborne asbestos exposures that continued after

TABLE 2. Summary of Cases

Case Number	Diagnosis	Age at Diagnosis	Talc Exposure History				Relative Increase in Ovarian Cancer Risk	Pathological Examination	
			Perineal Powdering	Upper body Powdering	Infant Exposure During Diapering	Adult Exposure During Diapering		Tissue Examined	Findings (Structures Per Gram of Tissue)
1	Metastatic high grade papillary serous carcinoma	45	10x/d, 40yrs	5x/d, 40yrs	8x/d, 2yrs	10x/d, 8yrs	31.1	Ovary (R)	Platy talc (333 s/g), Fibrous talc (4,000 s/g), Ferro-anthophyllite (3,667 s/g) Fibrous talc (1,200 s/g), ferro-anthophyllite (399 s/g) NSD* — — — NSD* NSD*
2	Poorly differentiated high grade serous ovarian carcinoma	53	1x/d, 36yrs	1x/d, 23yrs	8x/d, 2yrs	7.5x/d, 7.5yrs	4.1	Ovary (L) Fallopian tube (R) Fallopian tube (L) Pelvic Lymph Node (R) Pelvic Lymph Node (L) Ovary A Ovary B Possible fallopian tube A Possible fallopian tube B	Platy talc (323 s/g) NSD* Platy talc (56,700 s/g), Fibrous talc (4,720 s/g), Tremolite (22,000 s/g) Platy talc (2,001,503 s/g), Fibrous talc (13,343 s/g) Platy talc (12,308 s/g), Fibrous talc (8,202 s/g) Tremolite (15,670 s/g), Winchite (15,670 s/g), Richterite (15,670 s/g) Platy talc (43,829 s/g) Platy talc (2,860 s/g), Anthophyllite (952 s/g) Tremolite (604 s/g) Platy talc (30,000 s/g) Fibrous talc (868 s/g) Platy talc (12,600 s/g) Platy talc (17,600 s/g), Tremolite (2,510 s/g) Platy talc (10,900 s/g), Fibrous talc (1,810 s/g) Platy talc (25,000 s/g), Fibrous talc (5,000 s/g), Tremolite (5,000 s/g) Platy talc (77,200 s/g), Fibrous talc (7,720 s/g), Tremolite (3,860 s/g), Anthophyllite (3,860 s/g) Platy talc (50,600 s/g) (continues)
3	High grade serous carcinoma	49	3x/d, 39yrs	3x/d, 20yrs	8x/d, 2yrs	7x/d, 5yrs	9.6	Ovary, fallopian tube (R) Adnexa, fallopian tube (L) Pelvic lymph node (R) Pelvic lymph node (L) Ovary (R)	Platy talc (323 s/g) NSD* Platy talc (56,700 s/g), Fibrous talc (4,720 s/g), Tremolite (22,000 s/g) Platy talc (2,001,503 s/g), Fibrous talc (13,343 s/g) Platy talc (12,308 s/g), Fibrous talc (8,202 s/g) Tremolite (15,670 s/g), Winchite (15,670 s/g), Richterite (15,670 s/g) Platy talc (43,829 s/g) Platy talc (2,860 s/g), Anthophyllite (952 s/g) Tremolite (604 s/g) Platy talc (30,000 s/g) Fibrous talc (868 s/g) Platy talc (12,600 s/g) Platy talc (17,600 s/g), Tremolite (2,510 s/g) Platy talc (10,900 s/g), Fibrous talc (1,810 s/g) Platy talc (25,000 s/g), Fibrous talc (5,000 s/g), Tremolite (5,000 s/g) Platy talc (77,200 s/g), Fibrous talc (7,720 s/g), Tremolite (3,860 s/g), Anthophyllite (3,860 s/g) Platy talc (50,600 s/g) (continues)
4	Poorly differentiated serous adenocarcinoma	78	1x/day, 43yrs [§]	unknown [§]	unknown [§]	unknown [§]	2.3	Ovary (R)	Platy talc (333 s/g), Fibrous talc (4,000 s/g), Ferro-anthophyllite (3,667 s/g) Fibrous talc (1,200 s/g), ferro-anthophyllite (399 s/g) NSD* — — — NSD* NSD*
5	Low grade serous carcinoma	52	1x/d, 47yrs	1x/d, 47yrs	8x/d, 2yrs	10x/d, 10yrs	6.5	Ovary (R)	Platy talc (323 s/g) NSD* Platy talc (56,700 s/g), Fibrous talc (4,720 s/g), Tremolite (22,000 s/g) Platy talc (2,001,503 s/g), Fibrous talc (13,343 s/g) Platy talc (12,308 s/g), Fibrous talc (8,202 s/g) Tremolite (15,670 s/g), Winchite (15,670 s/g), Richterite (15,670 s/g) Platy talc (43,829 s/g) Platy talc (2,860 s/g), Anthophyllite (952 s/g) Tremolite (604 s/g) Platy talc (30,000 s/g) Fibrous talc (868 s/g) Platy talc (12,600 s/g) Platy talc (17,600 s/g), Tremolite (2,510 s/g) Platy talc (10,900 s/g), Fibrous talc (1,810 s/g) Platy talc (25,000 s/g), Fibrous talc (5,000 s/g), Tremolite (5,000 s/g) Platy talc (77,200 s/g), Fibrous talc (7,720 s/g), Tremolite (3,860 s/g), Anthophyllite (3,860 s/g) Platy talc (50,600 s/g) (continues)

TABLE 2. (Continued)

Case Number	Diagnosis	Age at Diagnosis	Talc Exposure History				Relative Increase in Ovarian Cancer Risk	Pathological Examination	
			Perineal Powdering	Upper body Powdering	Infant Exposure During Diapering	Adult Exposure During Diapering		Tissue Examined	Findings (Structures Per Gram of Tissue)
6	High grade serous papillary carcinoma	51	1x/d, 40yrs	1x/d, 40yrs	8x/d, 2yrs	10x/d, 10yrs	5.8	Adnexa, tumor/ovary (R)	Platy talc (21,300 s/g)
7	Serous adenocarcinoma	56	1x/d, 37yrs	1x/d, 37yrs	Unknown	7.5x/d, 6yrs	4.3	Adnexa, tumor/ovary (L) Adnexa, fallopian tube (R)	Platy talc (4,720 s/g) Platy talc (12,000 s/g), Tremolite (12,000 s/g), Anthophyllite (12,000 s/g)
								Adnexa, fallopian tube (L) Pelvic lymph node (L) Ovary (R)	Platy talc (13,700 s/g) Platy talc (11,500 s/g) Platy talc (8,740 s/g), fibrous talc (1,090 s/g)
8	High grade ovarian serous carcinoma	44	1x/d, 24yrs	1x/d, 24yrs	Unknown	3.5x/d, 4yrs	2.5	Ovary (L) Fallopian tube (R) Fallopian tube (L) Ovary (R)	Platy talc (10,500 s/g) Platy talc (8,500 s/g) Platy talc (10,900 s/g) Platy talc (3,340 s/g), Ferro-anthophyllite (1,670 s/g), Crocidolite (1,670 s/g)
								Ovary (L) Fallopian tube (R)	Platy talc (799 s/g) Platy talc (9,690 s/g), Fibrous talc (1,380 s/g), Tremolite (1,385 s/g), Anthophyllite (1,385 s/g)
9	Poorly differentiated serous papillary adenocarcinoma ^{II}	41	1x/d, 42yrs [§]	1x/d, 42yrs [§]	8x/d, 2yrs [§]	n/a [§]	4.1	Fallopian tube (L) Ovary (R)	Platy talc (7,400 s/g), Tremolite (1,850 s/g) NSD*
10	High-grade ovarian papillary serous carcinoma	42	2x/d, 32yrs	2x/d, 32yrs	8x/d, 2yrs	8x/d, 4yrs	6.8	Ovary (L) Fallopian tube (R) Fallopian tube (L) Pelvic Lymph Node (L) Ovary, fallopian tube (R)	NSD* NSD* NSD* Fibrous talc (8,770 s/g) Platy talc (10,800 s/g)
								Ovary, fallopian tube (L) Pelvic lymph node (R) Pelvic lymph node (L)	Platy talc (5,520 s/g) Platy talc (79,300 s/g) Platy talc (84,400 s/g)

*No asbestos or talc structures detected.

^ITissue received, but not analyzed.^{II}Richierite asbestos were known as sodium tremolite.[§]Patient deceased; exposure history based on recollections of family and friends.^{||}The final pathology report also noted minor components of transitional cell and mucinous carcinoma.[¶]Two tremolite structures were reported with an aspect ratio of less than 5:1 that were not counted.

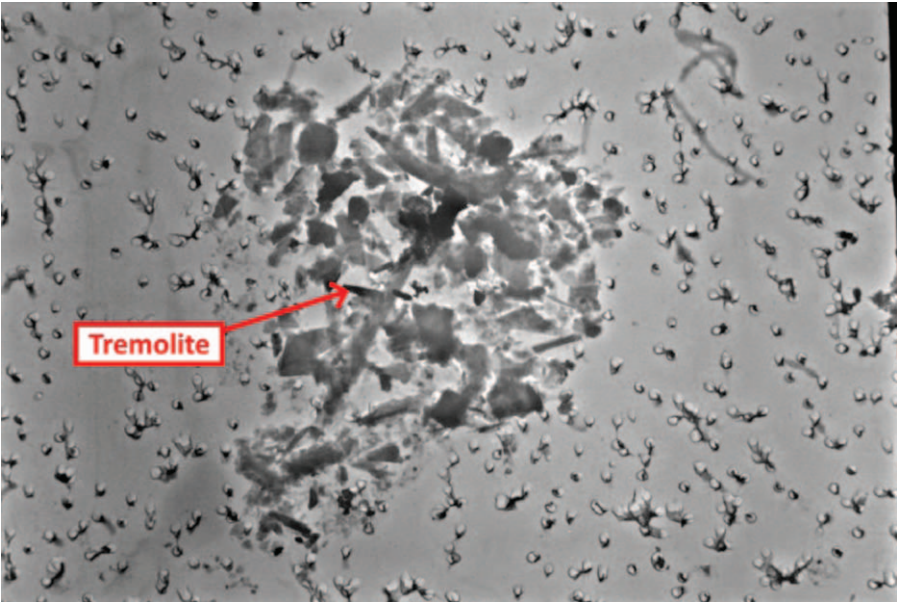


FIGURE 2. TEM image of cluster measuring 20.0 × 16.0 μm composed of 36 counted talc plates, two fibrous talc structures, and one tremolite fiber identified in “possible fallopian tube B” tissue of Case No. 2.

the sampling time.⁹³ Dement et al⁹³ collected air samples for 2 minutes during a simulated diaper change with JBP, but another experiment in the same study indicated that exposures continued for at least 3 minutes and likely persisted for even longer. Dement et al⁹³ used phase contrast microscopy and did not differentiate between asbestos and fibrous talc. However, in 1968, NIOSH injected asbestos containing “cosmetic” talc into hamsters and detected tremolite asbestos bodies but no fibrous talc in the animal lungs.¹³⁴ Anderson et al¹⁰⁰ reported much lower levels during body dusting with talc (0 to 0.0039 f/cc). However, the microscopist in the Anderson et al^{100,135} study originally identified four anthophyllite asbestos fibers in the air samples by TEM, but changed the result to transition fibers at the request of the project supervisor due to concern that the results would be used in litigation.¹³⁵

Both our study and Gordon’s et al⁴¹ exposures assessment used less talc powder than the average user: these experiments used 4.05 and 0.37 g of talc respectively, but J&J’s unpublished studies found that women used 8.16 g and men used 13.02 g of talc powder on average during body powdering.^{41,136} Anderson et al¹⁰⁰ reported that subjects used 11.6 g of talc on average to powder their bodies after showering. Therefore, our use estimates were 3 to 20 times lower than Anderson et al¹⁰⁰ and J&J’s.

We also excluded many reported talc uses from our dose calculations due to a lack of exposure data. For instance, three cases (No. 1, No. 3, and No. 5) regularly used talc powder on their sheets and pillows; several other cases also reported seeing and smelling dust in the air while cleaning the room where they regularly applied talc. (See Appendix 5, <http://links.lww.com/JOM/A690> for complete exposure

TABLE 3. Summary of Studies Reporting Asbestos in Consumer Talc Products		
Study	Test Method	Summary of Findings
Rohl et al (1976)	XRD, PLM, TEM, SEM	0.1–14% tremolite and anthophyllite (mostly fibrous) by weight in 10 of 20 consumer talc products tested
Paoletti et al (1984)	TEM	0.5–1.6% tremolite asbestos in two of six Italian cosmetic talc powders tested Trace to 0.15% chrysotile in 3 of 14, 18.7–21.7% anthophyllite asbestos and tremolite asbestos in 2 of 14, and 0.13% tremolite asbestos & chrysotile in 2 of 10 samples provided by the European Pharmacopeia
Blount (1991)	PLM	10 to 341 structures per mg amphibole fibers, needles, cleavages and “prismatic pieces” in 9 of 14 samples of pharmaceutical and cosmetic-grade talc powders tested
Jehan (2004)	PLM	Qualitative identification of tremolite asbestos in 13 of 28, chrysotile in 12 of 28, anthophyllite asbestos in 3 of 28, and a mixture of asbestos fibers in 4 of 28 cosmetic talc powder products used in Pakistan
Floyd (2004)	TEM	0.20% anthophyllite asbestos by weight in Johnson’s Baby Powder
Mattenklott (2009)	SEM	0.001–0.0073% asbestos by weight in 13 of 57 samples of talc powders sold on the German market from 1996 to 2005
Gordon et al (2014)	PLM	1,840–1,104,000 fibers per gram asbestos in 50 of 50 historical samples of one brand of cosmetic talc powder tested (40 of 50 contained anthophyllite asbestos only, four contained tremolite asbestos only, four contained tremolite and anthophyllite asbestos, two contained tremolite, anthophyllite, and chrysotile asbestos)
	TEM	0.004–0.9% amphibole asbestos by weight in nine of nine samples of the same cosmetic talc product
Ilgren et al (2017)	TEM	3.687 × 10 ⁶ tremolite asbestos fibers/g in an authentic sample of commercial talc produced prior to 1975 from the talc mine in Val Chisone, Italy

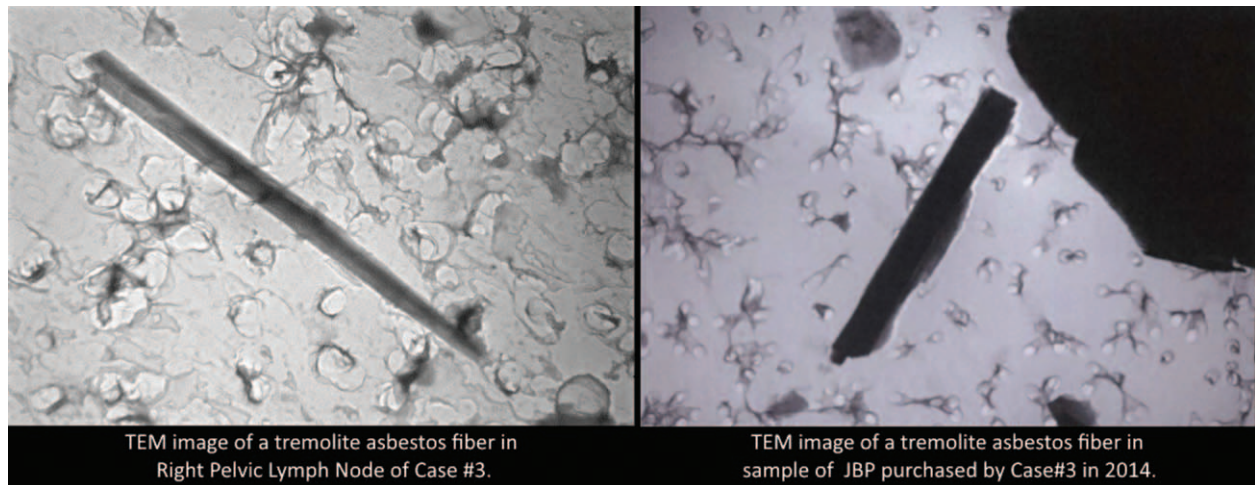


FIGURE 3. TEM images of a tremolite asbestos fibers in Case No. 3 right pelvic lymph node tissue (left) and in sample of JBP purchased by Case No. 3 in 2014 (right).

histories.) Although our findings indicate that asbestos is present in consumer talc products at a level sufficient to cause disease, our dose estimates may under or over estimate the total exposure to asbestos in talc in these cases.

Burns et al¹³⁷ created a dose estimation-model for cosmetic talc, relying on previous assessments to predict asbestos exposure, including Moon et al¹³⁸, Gordon et al⁴¹, Russell et al¹³⁶, and Anderson et al.¹⁰⁰ Burns's et al¹³⁷ assessment was based on an assumption of 0.1% level of asbestos in talc mathematical model that incorrectly reduced the exposure estimate by 1000. For example, Gordon et al⁴¹ reported, 4.8 f/cc, however, Burns's et al¹³⁷ math model reduces this figure to 0.0048 f/cc. In comparison, Addison et al (1988)¹³⁹ reported that dusts containing 0.1% asbestos may release 1.17 to 2.79 asbestos fibers/cc into the air, consistent with our measurements.

Our tissue analysis results were consistent with previous reports of asbestos and/or talc in ovarian tissue.^{136,140–144} (See Table 4.) The number of asbestos structures per gram, however, was approximately one order of magnitude lower in our study than in previous quantitative studies of asbestos in ovarian tissue.¹⁴³ This discrepancy may be due to differences in tissue preparation and analytical procedures. Other quantitative studies relied on wet tissue weight for their analysis whereas we used a dry weight procedure.¹⁴³ Additionally, we counted 100 to 300 grid openings in our study while other studies appear to have counted the entire grid area.¹⁴³ We also found that some tissue samples contained “hot spots” with very high concentrations of asbestos and/or talc compared with the surrounding tissue. (See Fig. 2.) The occurrence or absence of “hot spots” may also account for variability in reported asbestos concentrations in tissue. The predominant types of asbestos identified in our series (tremolite and anthophyllite asbestos) are the same as those most commonly reported in past studies.^{140,143,144}

We did not consider latency in our risk estimate because our calculations followed the EPA risk assessment, which did not consider latency.⁹² In addition, Pira et al⁶⁸ found that for asbestos-caused ovarian cancer “...the SMRs increased monotonically with time since first employment, although the number of deaths was small in several categories...” Our omission of latency from this study is to remain consistent with the EPA assessment and reflect the lack of effect demonstrated by Pira's et al analysis.

We omitted fibrous talc from our risk assessment due to a lack of dose–response data in the published literature. IARC has previously classified fibrous talc as a Group 1 carcinogen and OSHA regulates fibrous talc per the asbestos standard.^{3,43,145–147} Further research on the relationship between talc powder use and ovarian cancer should include studies of fibrous talc toxicity.

CONCLUSION

Of the 10 reported cases of serous ovarian cancer, all were found to have talc and eight were found to have asbestos in their tissue samples. The main types of asbestos identified in tissue, tremolite and anthophyllite, constitute a fingerprint for talc containing asbestos and indicate that “cosmetic” talc powder as the source of asbestos exposure in these cases. IARC has concluded that asbestos is an ovarian carcinogen.⁴³ IARC has likewise classified talc containing asbestiform fibers (including both asbestos and fibrous talc) as a carcinogen.^{3,43,148} These cases provide more evidence of the causal link between asbestos, talc, and ovarian cancer and indicate that asbestos is present in consumer talc products at a level sufficient to cause disease.

In 1973, J&J told the Food and Drug Administration (FDA) that “Johnson & Johnson's policy of full cooperation with FDA and that if the results of any scientific studies show any question of safety of talc, Johnson & Johnson will not hesitate to take it off the market” and their corporate position is that there is no known safe level of exposure to asbestos.¹⁴⁹ J&J's studies have shown that asbestos has been present in its cosmetic talc ores since the 1950s. In 2019, the FDA has found asbestos in JBP sourced from China and Claire's cosmetics.^{150,151} At least three retailers of cosmetic talc accept the causal relationship between talc use and ovarian cancer: Angel of Mine, Perfect Purity, and Assured Body and Foot Powders warn that “frequent application of talcum powder in the female genital area may increase the risk of ovarian cancer.”¹⁵² In addition, J&J's talc supplier Rio Tinto Minerals has warned its customers since 2006 of this risk in Material Safety Data Sheets (MSDS) for talc: “perineal use of talc-based body powder is possibly carcinogenic to humans.”^{153,154} J&J removes this warning from its talc MSDS and cosmetic talc products.¹⁵⁵ Because talc powder is a cosmetic product with no medical benefit, these warnings still do not warrant the sale of a products when the benefits cannot outweigh the risks, especially when there is a safer substitute.^{156–158}

TABLE 4. Summary of Studies Finding Asbestos and/or Talc in Ovarian Tissue From Cosmetic Talc Use

Study	Tissue Weight Type	Test Method	Summary of Findings
Henderson et al (1971)	n/a	TEM	Qualitative identification of talc in 10/13 ovarian tumors
Langer (1971)	n/a	Unknown	Qualitative identification of talc in 12/21 cervical tumors
Heller, Westhoff et al (1996)	Wet weight	PLM	Qualitative identification of talc and chrysotile asbestos in Henderson et al (1971) samples
			26–464 talc particles per gram in 12/12 samples of benign ovarian neoplasms from 12 women with history of adult perineal talc use
			69–420 talc particles per gram in 11/11 samples of benign ovarian neoplasms from 12 women with history of talc diapering during infancy
			6–2,200 talc particles per gram in 6/7 samples of benign ovarian neoplasms from 12 women with no history of adult perineal talc use and an unknown history of other talc uses
		TEM	151,300–7,565,000 talc particles per gram in 5/12 samples of benign ovarian neoplasms from 12 women with history of adult perineal talc use
			151,300–1,600,288 talc particles per gram in 6/11 samples of benign ovarian neoplasms from 12 women with history of talc diapering during infancy
			63,042–1,669,000 talc particles per gram in 3/7 samples of benign ovarian neoplasms from 12 women with no history of adult perineal talc use and an unknown history of other talc uses
Cramer et al (2007)	n/a	PLM and SEM	Qualitative identification of birefringent particles consistent with talc in pelvic lymph nodes of a 68-year-old woman with stage III ovarian papillary serous carcinoma and a 30-year history of perineal talc use

J&J should comply with its self-proclaimed obligation to take talc-containing cosmetic products off the market “if the results of any scientific studies show any question of safety of talc, Johnson & Johnson will not hesitate to take it off the market.”¹⁴⁹

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Exhibit 7

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY
CIVIL ACTION NO 16-MD-2738 (FLW) (LHG)

----- :
IN RE JOHNSON & JOHNSON : DAUBERT HEARING
POWDER PRODUCTS MARKETING, : JULY 24, 2019
SALES PRACTICES. : VOLUME 3
----- :

CLARKSON S. FISHER UNITED STATES COURTHOUSE
402 EAST STATE STREET, TRENTON, NJ 08608

B E F O R E: THE HONORABLE FRED A. L. WOLFSON, USCDJ

A P P E A R A N C E S:

BEASLEY ALLEN, ESQUIRES

BY: P. LEIGH O'DELL, ESQUIRE (ALABAMA)

-and-

ASHCRAFT & GEREL, ESQUIRES

BY: MICHELLE A. PARFITT, ESQUIRE (VIRGINIA)

-and-

MOTLEY RICE, ESQUIRES

BY: DANIEL R. LAPINSKI, ESQUIRE (NEW JERSEY)

NATHAN D. FINCH, ESQUIRE (WASHINGTON D.C.)

-and-

LEVY KONISBERG, ESQUIRES

BY: JEROME H. BLOCK, ESQUIRE (NEW YORK)

On behalf of Plaintiffs Steering committee

DRINKER, BIDDLE & REATH, ESQUIRES

BY: SUSAN M. SHARKO, ESQUIRE (NEW JERSEY)

JULIE L. TERSIGNI, ESQUIRE (NEW JERSEY)

-and-

SKADDEN, ARPS, SLATE, MEAGHER & FLOM, ESQUIRES

BY: JOHN H. BEISNER, ESQUIRE (WASHINGTON, D.C.)

-and-

PROSKAUER ROSE, ESQUIRES

BY: BART H. WILLIAMS, ESQUIRE (CALIFORNIA)

(Continued.)

* * * * *

VINCENT RUSSONIELLO, RPR, CRR, CCR
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A P P E A R A N C E S C O N T I N U E D

WEIL GOTSHAL & MANGES, ESQUIRES

BY: ALLISON M. BROWN, ESQUIRE

On behalf of Defendant Johnson & Johnson

SEYFARRTH & SHAW, ESQUIRES

BY: THOMAS L. LOCKE, ESQUIRE (WASHINGTON D.C.)

On behalf of Defendant Personal Care Products Council

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1 M O R N I N G S E S S I O N

2
3 (In open court.)

4 THE DEPUTY CLERK: All rise.

5 THE COURT: Thank you.

6 Good morning. Everyone may be seated.

7 Are we ready?

8 MS. BROWN: Before we begin, I did want to
9 raise one issue regarding Dr. Longo's testimony with
10 the Court.

11 Could we perhaps ask Dr. Longo to leave before
12 I do that?

13 THE COURT: Yes.

14 (Dr. Longo leaves the courtroom.)

15 MR. BLOCK: Your Honor, my name is Jerome
16 Block, and I'm from the firm of Levy Konigsberg. I
17 will be assisting the Plaintiffs Steering Committee
18 and I will be presenting Dr. Longo's testimony.

19 Thank you, your Honor.

20 MS. BROWN: Good morning, your Honor.

21 I'm Alli Brown from Weil Gotshal for J&J.

22 Counsel was kind enough to just provide me a
23 few minutes ago with a copy of the PowerPoint they
24 intend to use with Dr. Longo; and in looking through
25 it, I have a couple of concerns that I wanted to raise

1 now.

2 A number of the slides deal with internal
3 Johnson & Johnson company documents. I would submit
4 to the Court that Dr. Longo's interpretation of those
5 documents is not relevant to the inquiry here. He is
6 a materials scientist who plaintiffs are putting
7 forward as an expert witness on his own testing of
8 Johnson & Johnson samples. He has no personal
9 knowledge about these decades old documents. He has
10 no particular expertise that would allow him to
11 interpret these company documents.

12 In fact, your Honor, as it relates to a number
13 of the documents that are contained in counsel's
14 PowerPoint presentation, Dr. Longo himself has
15 testified as recently as a month or two ago that
16 essentially the interpretation of those documents is
17 an issue for the trier of fact.

18 So I would submit, putting Dr. Longo up to
19 interpret documents that he doesn't know anything
20 about and has no expertise to interpret is
21 inappropriate in this setting and should not be done
22 here.

23 MR. BLOCK: Good morning, your Honor.

24 Any documents that are internal documents or
25 historical documents that are going to be presented

1 today with Dr. Longo's testimony were, first, either
2 referenced in his report or were part of his reliance
3 materials in this MDL.

4 The relevance of the documents that we are
5 going to present -- and I think it will be helpful to
6 the Court to see them in context as we go -- is that
7 these documents go directly to the issue of the
8 methodology, the reliability of the methodology.

9 For example, we have one -- it is slide 20 --
10 that shows the heavy liquid separation preparation
11 method used by a consultant from Johnson & Johnson
12 back in 1974 and being used the same way in which
13 Dr. Longo has used it in this case, being used in the
14 same way as Dr. Alice Blount used that same method in
15 1991, being used in the same way as ISO, the
16 International Standard Organization specifies that it
17 be used.

18 THE COURT: Let me just short circuit. I
19 understand where everybody is on this point. If he
20 has cited them in his report, I'll let him reference
21 them. I understand I'm not going to accept how he may
22 interpret a document. We don't have a jury here. So
23 I think I can filter this out appropriately and know
24 when he may be overstepping, and when he says that a
25 particular test was done, and, yes, it has been done

1 for 50 years, and look J&J did it as well, I'm sure
2 you will cross him whether that is the same test or
3 not.

4 Let's get it in and let's go.

5 MS. BROWN: Thank you, your Honor.

6 MR. BLOCK: We're ready to proceed.

7 THE COURT: Bring the witness in.

8 (Dr. Longo enters the courtroom.)

9 (Pause.)

10

11 WILLIAM E. LONGO, called as a witness on behalf of the
12 plaintiffs, having been first duly sworn, testifies as
13 follows:

14

15 DIRECT EXAMINATION

16 BY MR. BLOCK:

17 Q. Dr. Longo, good morning.

18 A. Good morning, sir.

19 Q. Dr. Longo, can you state your full name for the
20 record.

21 A. William Edward Longo.

22 Q. Dr. Longo, where do you live and work?

23 A. I live in Alpharetta, Georgia, which is right
24 outside of Atlanta, and I work in Suwanee, Georgia,
25 which is another suburb outside of Atlanta.

1 Q. What is your employment and title at the
2 company?

3 A. I work for a company called Materials Analytical
4 Services and I am the president.

5 THE COURT: Keep your voice up. I have been
6 told those in the back of the Court cannot hear. I
7 need everyone in the courtroom to hear. I know you
8 testify regularly. I know you know how to do it.

9 Q. Before we talk about your company Materials
10 Analytical Services, I would like you to tell the
11 Court about your education and your background,
12 starting with undergrad, going to your Master's and
13 Ph.D..

14 A. I went to the University of Florida, got a
15 Bachelor's and Major in microbiology with a Minor in
16 chemistry.

17 I went to graduate school at the University of
18 Florida. I got a Masters in materials science and
19 engineering and then I graduated in 1983 with a Ph.D.
20 or Doctorate in materials science and engineering.

21 Q. What is the field of materials science and
22 engineering that you have a Master's and Ph.D. in?

23 A. It is literally the study of materials both to
24 characterize them, to understand them, and to develop
25 new materials. These materials can usually be broken

1 down into five major groups: metals or metallurgy,
2 polymers or plastics, minerals, ceramics, such as
3 asbestos, composites where you may mix two of these
4 types together, putting metal spheres in with a
5 polymer to change what it can do and behave, and
6 biomaterials. These are things that are implanted
7 into the body.

8 As a materials scientist we are educated and
9 taught in practice on where are the best types of
10 materials to use in a situation that it is needed in.
11 For example, a civil engineer and a mechanical
12 engineer will probably go to a materials scientist on
13 what is the best concrete strength if they are going
14 to build a bridge, how strong is the concrete they
15 need for the specifications, what type of metal for
16 the structures out there, can it stand up to
17 corrosion, and so on.

18 Materials scientists also develop a lot of new
19 materials. A simple example is if you are my age, you
20 can remember when soda cans were steel and had a seam
21 down the back side of it to put the cylinder together,
22 and also had a second piece for the top and a third
23 piece for the bottom. Materials scientists came up
24 with what we call Aluminium Cans, which is a copper
25 aluminum alloy that was made that you could make it

1 in two pieces.

2 Q. Let's talk about your experience testing
3 materials for asbestos. When did that begin and how
4 did you get your start testing materials for asbestos?

5 A. The very first air sample I tested for asbestos
6 was in 1984, air sample. I got involved in it because
7 I read an article by Walter C. McCrone about using
8 phase contrast microscopy to analyze air samples to
9 determine how much asbestos was in it, and I thought
10 transmission electron microscopy would be better.

11 Literally, the first company I was involved in
12 opened its doors in October of 1983, about two months
13 before I graduated and got my Ph.D.

14 Q. Did you have training during your graduate
15 school programs at the University of Florida in
16 analyzing materials for asbestos or analyzing other
17 materials using what's called a transmission electron
18 microscope?

19 A. The first part of the question is no. We
20 weren't analyzing asbestos samples in graduate school.
21 But in our materials science department we had two
22 transmission electron microscopes: one scanning
23 electron microscope, X-ray diffraction; and as a
24 graduate student, you are expected to use all those
25 instruments.

1 We did graduate level training in transmission
2 electron microscopy, how to do diffraction; selected
3 area of diffraction, energy dispersive and the science
4 behind it. The same with scanning electron
5 microscopy -- not asbestos, but mineral particulates
6 that you would have to characterize the same way you
7 do asbestos fibers.

8 Q. When did you obtain your Ph.D. in materials
9 science and engineering?

10 A. I graduated in December 1983.

11 Q. How do you then begin to analyze materials for
12 asbestos -- and you mentioned a company that you
13 started after graduating with your Ph.D. in 1983?

14 A. Yes. I started a company called Microanalytical
15 Laboratories, which was a materials science small
16 company with a -- first with a scanning electron
17 microscope and a transmission electron microscope. A
18 little bit less than a year later, when we started
19 focusing on trying to educate and have people use our
20 facility to analyze air samples for asbestos, that's
21 when the first sample came in.

22 THE COURT: Can everybody hear Dr. Longo?

23 Q. Dr. Longo, tell us a little bit more -- before
24 we get to your work at MAS, tell us about your
25 personal experience analyzing materials for asbestos

1 at this first company called Microanalytical, and how
2 long did you have that first company for?

3 A. When we started getting air samples for asbestos
4 analysis, I was the primary technician. As the person
5 that prepared the samples, analyzed the samples, that
6 was from 1984 until I left that company in August of
7 1987. I don't know how many hundreds or thousands of
8 samples that were done, hundreds to thousands of air
9 samples done over those three years. So I had quite a
10 bit of experience doing that. We had a technician we
11 finally hired that was also doing it because the
12 laboratory was getting very busy.

13 Q. Have you been involved in the testing of
14 materials for asbestos now for about 35 years?

15 A. Yes, sir.

16 Q. Let's talk about your company Materials
17 Analytical Services. How did that company get started
18 and how big was it when it began, and how did it
19 evolve over time?

20 A. We opened the doors in February of 1988, and I
21 got involved with it after I left Microanalytical
22 Laboratories. I had a partnership with a big
23 engineering firm called Law Engineering, not lawyers,
24 but Thomas E. Law was the individual who started that
25 company. So we started with a 4000-square foot space,

1 and I had three employees -- myself, a receptionist,
2 and one technician.

3 In 2006 the company grew to almost 100 people.
4 We had a main laboratory outside of Atlanta. We had a
5 materials science semiconductor laboratory in North
6 Carolina. We had a semiconductor laboratory in
7 Phoenix. We had a semiconductor laboratory in San
8 Jose and consulting offices in California and
9 Washington, D.C. where we had employees that were in
10 both of those.

11 Q. Can you tell Judge Wolfson basically the current
12 setup of Materials Analytical Services in terms of the
13 space you have and how many people you employ and what
14 type of professionals do you employ at MAS?

15 A. After 2006 we had only the Suwanee office which
16 is a 20,000 square foot laboratory that has multiple
17 transmission electron microscopes, multiple scanning
18 electron microscopes, optical microscopes, as well as
19 all -- a lot of other types of analytical equipment
20 for organic analysis.

21 The staff is made up of the administration
22 people and technicians. We have microbiologists, we
23 have other materials scientists, we have physicists,
24 we have biologists, we have geologists -- I don't want
25 to leave anybody out -- inorganic chemists, organic

1 chemists, and optical microscopists who have degrees
2 in geology, or something related, electron
3 microscopist specialist.

4 I think that covers it. We have approximately
5 43 people currently.

6 Q. Does Materials Analytical Services only test
7 materials for asbestos, or do they do a broader range
8 of work and have they done a broader range of work
9 presently and over time?

10 A. We do a broader range of work. Asbestos is
11 still one of our key samples that we analyze, but we
12 also analyze and do work for environmental testing for
13 metals, organics.

14 The volatile organic compounds, VOC testing,
15 such as the green labeling that is being done across
16 the country where companies want to understand what is
17 being released from the products that are made that
18 have volatile organic compounds.

19 For example, the new car smell that everybody
20 likes. That's volatile organic compounds being
21 released by the plastic rugs; it is supposedly not
22 that good for you. We do a lot of that and
23 certifications.

24 We also do materials science work,
25 semiconductor work, failure analysis outside of the

1 area of asbestos. We work not for the FDA, but we do
2 work in pharmaceutical areas where we have an FDA
3 laboratory number.

4 So our laboratory can analyze and receive
5 prescription drugs from Schedule 2 on down and store
6 them so that we also have a DEA license so we can
7 receive these materials and test it. So we're pretty
8 broad-ranged.

9 Q. Dr. Longo, looking at your slide here, it has
10 EPA Peer Review Group, and, in a parenthetical, it
11 says "asbestos." Have you ever been selected to serve
12 on any EPA peer review group related to asbestos or
13 asbestos-testing methodology?

14 A. Yes.

15 Q. Can you tell the Court about that.

16 A. I was on initially the EPA peer review group for
17 their asbestos engineering program where scientists
18 from this country as well as Canada were invited to
19 come to the Environmental Protection Agency office in
20 Cincinnati and provide opinions, guidance on where the
21 Environmental Protection Agency should put their
22 research into to solve asbestos problems.

23 Q. Was that a group of professionals that had
24 expertise in the methodologies for testing asbestos or
25 samples to determine if they had asbestos?

1 A. It is more broad than that. It is not only
2 testing asbestos, testing samples for asbestos, but it
3 was managing asbestos projects, suggestions on
4 removing asbestos. So it was broad range.

5 The second panel I was on was EPA invited just
6 microscopists to help them develop a method for
7 analyzing building dust for asbestos.

8 Q. Going back to the first one, you said "EPA Peer
9 Review Group Panel." How many other professionals
10 were selected to serve on that EPA Peer Review Panel?

11 A. For the small working group there were four to
12 five.

13 Q. When was that?

14 A. That was in late 1980s, '89, '90, and I think
15 the last one was in 1991 or so.

16 Q. You began to tell the Court about another
17 collaboration with the EPA on developing a particular
18 test method. Can you tell the Court about that?

19 A. EPA was interested in getting a standardized
20 method for analyzing asbestos contaminated building
21 dust or dust not in a building where they could
22 measure and determine the concentration of asbestos
23 structures per area of dust that they sampled. We
24 worked on that for multiple days. They issued a draft
25 report and then decided that the best avenue to get

1 this into the public domain was to go and put it into
2 the ASTM committee.

3 Q. Why was that important from a public health
4 standpoint developing a method to look at dust that
5 had settled on the surface in a building to determine
6 if it contained asbestos; and, if so, how much
7 asbestos?

8 A. It was important in that if you had asbestos in
9 buildings at this time period, you had to manage it --
10 meaning, if you had fireproofing asbestos,
11 fireproofing up in the building, and you have a drop
12 ceiling, like we have here, over time that
13 fireproofing will release asbestos dust just from
14 building vibration, from age, from gravity, and the
15 top of the ceiling tiles get contaminated with
16 asbestos dust.

17 Workers who have to remove ceiling tiles or
18 change lights have to know there is significant
19 contamination on these ceilings, or a building that
20 has asbestos fireproofing where you don't have a
21 ceiling -- like mechanical rooms, et cetera, the dust
22 that's being released causing contamination. So this
23 gave a method you could make those measurements and
24 they wanted to standardize it.

25 Q. Did that initial collaboration you had with the

1 EPA on developing this method ultimately turn into
2 what's known as ASTM 5755, or D-5755?

3 A. Yes, sir.

4 Q. Did you take any leadership role -- or what was
5 your role in the authorship or the creation of the
6 ASTM testing method?

7 THE COURT: When was this?

8 THE WITNESS: This started in 1990 and ended
9 in 1995.

10 Q. What does ASTM stand for?

11 A. It is the American Society For Testing of
12 Materials. It is now always ASTM International. I
13 still call it the American Society of Testing
14 Materials.

15 Q. In testing materials for asbestos, why is it
16 important to have published standards such as
17 standards from the ASTM?

18 A. It is important that if you are using an ASTM
19 method and you say you are using the D-5755, then
20 other labs who are familiar in using that method you
21 can compare the results. So you are standardizing the
22 testing because changing the testing method can change
23 the result. So you always want to have a standardized
24 method like this where everybody understands what is
25 being done, how the recipe goes from A to Z, and the

1 meaning of the results.

2 Q. All right. Can you just briefly tell us -- we
3 have a slide here which has the cover page of ASTM
4 D-5755, and it has a number of signatures on it, and
5 it has some bullets about your involvement.

6 Can you tell us about the process of creating
7 the standard and what the signatures on the cover page
8 represent to you?

9 A. Creating a standard that everybody agrees on is
10 a long process. You essentially have a subcommittee,
11 the committee, then the overall membership of ASTM.
12 Getting a standard through, you have to get agreement
13 from all the scientists who are present and
14 nonscientists. One negative vote can send this back
15 to rewrite.

16 So after six months a new document would go
17 out for voting. It wasn't so much on the actual how
18 to do the method; it is the language that goes into
19 it. My opinion, it is one of the most peer-reviewed
20 documents, ASTM standards out there.

21 Q. Does the ASTM-5755 method contain a test
22 protocol for testing asbestos materials with the
23 transmission electron microscope?

24 A. Yes, sir, it does.

25 Q. Is that one of the methods you followed in this

1 case in testing Johnson & Johnson's talc for asbestos?

2 A. Yes, sir.

3 Q. Today will we be going through portions of this
4 ASTM 5755 and showing the Court portions of this
5 standard and showing how you follow this standard in
6 testing Johnson & Johnson talc for asbestos?

7 A. Yes, sir.

8 Q. The slide says: "Leadership on ASTM D-22
9 committee and D 2008.07 subcommittee on sampling and
10 analysis of asbestos." What does that mean and what
11 was your leadership role in that?

12 A. It was our dust method we had developed in our
13 laboratory that ultimately became the method of
14 choice. Since we had already been using something
15 very similar, I was chosen, volunteered to shepherd
16 this through the subcommittee to get it to a standard.
17 That involved five years and hundreds and hundreds of
18 man hours to get agreement across the board from all
19 the different scientists and others on the committee.
20 We would put it together, vote on it; if there was
21 negatives, the next meeting you work through the
22 negatives, and so on and so forth.

23 Q. In terms of achieving a scientific consensus on
24 the ASTM 5755, did that involve obtaining the
25 agreement of the others in voting on the standard and

1 serving on the committee?

2 A. Yes.

3 Q. Did that include Drew Van Orden?

4 A. It did.

5 Q. Is Drew Van Orden with a group called RJ Lee who
6 serve as experts for Johnson & Johnson in talc cases?

7 A. Yes.

8 Q. Did that include someone named Slim Thompson who
9 is a representative of the industry of a company that
10 mines and produces talc?

11 A. Dr. Thompson, that was his nickname, "Slim."

12 Q. Did that include Dr. Jim Millette who has
13 published in the literature and used to work for the
14 EPA and studied the issues of asbestos and talc?

15 A. Yes.

16 Q. Did that include Michael Beard?

17 A. Michael Beard was in charge of the analytical
18 side at the Environmental Protection Agency for
19 asbestos. After he passed away, we now have the
20 Michael Beard Conference on asbestos in Johnson,
21 Vermont, every two or three years.

22 Q. Going back to this cover slide here, can you
23 tell the Court about the certifications that Materials
24 Analytical Services has that are relevant to the
25 testing of materials for asbestos? What

1 certifications does MAS have?

2 A. The primary certification for testing of
3 asbestos is the NVLAP, which stands for the National
4 Voluntary Laboratory Accreditation Program that's run
5 by NIST, the National Institute of Standard and
6 Technology. That is the certification for analyzing
7 asbestos bulk samples and asbestos air samples by TEM
8 on behalf of the EPA for their AHERA regulations
9 Asbestos Hazard Emergency Response Act.

10 Q. How did your lab obtain the certification from
11 NVLAP as it relates to asbestos, and how does your lab
12 continue to be recertified for testing asbestos?

13 A. After the AHERA Act was passed, I think in 1988
14 or so, they knew they had to get a certification
15 process going. When that started -- I forget if it
16 was '89 or '90 or '91 or so, we started participating.
17 Really, you have to do certain types of analysis,
18 certain types of checklists, quality control, and so
19 on and so forth, put it together; then every two years
20 or so, an auditor will come to your laboratory and
21 spend a week there looking at all the documents and
22 see how well you are following their protocols for
23 keeping that accreditation.

24 Q. Is your lab certified by a group called AIHA,
25 and what does that stand for?

1 A. That's the American Industrial Hygiene
2 Association. We have their certification for doing
3 phase contrast microscopy for asbestos fibers or
4 fibers. PCM it is called. They also certify us in a
5 lot of organic chemical analysis and a lot of
6 inorganic analysis, as well as mold analysis. We had
7 that I think since 2000 maybe.

8 Q. Is your lab certified by a group called ISO, the
9 International Standard Organization? Can you tell us
10 about that?

11 A. We have some ISO certifications that's run by
12 the American Association of Independent Labs. For
13 certain types of analysis that we do for VOC, volatile
14 organic compound analysis, and we also are certified
15 to look at others who test for volatile organic
16 compounds, and furniture and materials that certify
17 the analysis is okay.

18 Q. Does your lab have an FDA lab number, and can
19 you tell us what that is, and describe the process
20 that MAS had to go through to obtain that?

21 A. Getting the FDA lab number is essentially
22 registering, sending in your QAQC manual and other
23 things.

24 Q. What is "QAQC" and how did you refer to that?

25 A. Quality Assurance and Quality Control. They

1 pretty much leave you alone until at some point they
2 will audit your laboratory to make sure you are
3 following the rules and regulations.

4 Q. How does that work? Do they give you a certain
5 amount of notice? How does that work when the FDA
6 comes and looks at your lab to make sure your quality
7 control and quality assurance is sufficiently reliable
8 to obtain an FDA lab number?

9 A. The auditors show up unannounced.

10 Q. Now, I want to talk about some of the states,
11 municipalities, and state agencies that you and
12 Materials Analytical Services have consulted with
13 specifically on issues of asbestos. Let's start with
14 the Port Authority of New York and New Jersey as an
15 example.

16 A. Beside them and others, we were asked to take a
17 look at the asbestos fireproofing and asbestos
18 acoustical plasters, asbestos ceiling tiles to
19 determine if by reverse engineering these asbestos
20 materials, fireproofing, could we determine who
21 manufactured the product. It is called product ID,
22 and we could. Once you get the formulations for the
23 various fireproofing.

24 So New York and New Jersey, all their public
25 buildings, including the World Trade Center, we were

1 able to analyze and determine who manufactured the
2 asbestos-containing fireproofing. If it had a certain
3 kind of ingredients, chrysotile, gypsum and
4 vermiculite with no starch, that was W. R. Grace
5 Monokote III.

6 Q. Did that involve some of the same types of
7 analyses that you have done in testing Johnson &
8 Johnson's talc for asbestos in terms of the type of
9 microscopy followed and the steps followed according
10 to the generally-accepted methods?

11 A. Yes, the polarized light microscopy is the
12 standard PLM analysis, and the TEM was used to verify
13 and identify the asbestos fibers using the standard
14 techniques and then going further to identify the
15 other nonasbestos minerals to compare to the formulas
16 for those products.

17 Q. Can you give us a representative listing, to the
18 best of your ability, of states, municipalities and
19 state agencies that have hired Materials Analytical
20 Services to analyze materials for asbestos?

21 A. The city of New York, the state of New York, the
22 city of Baltimore, the city of Boston, the school
23 district in Chicago, the state of Utah, the state of
24 Texas, the state of Hawaii, the Los Angeles school
25 district, the San Francisco school district, and then

1 individual buildings across this country, Prudential
2 Insurance for all of the buildings they owned across
3 this country. So hundreds and hundreds, thousands of
4 buildings we were asked to see if we could determine
5 who manufactured the asbestos products.

6 Q. Do you think you could sort of give us a brief
7 summary, maybe 30 seconds or so, on any work that MAS
8 has done for the CDC, NIH, NASA, and the Air Force, if
9 it doesn't relate to asbestos, but just give us a
10 general overview of work for those entities.

11 A. For the Center of Disease Control and National
12 Institutes of Health we did some high resolution
13 scanning electron microscopy work for them. They
14 wanted to image in one case the Ebola virus and the
15 other case, the AIDS virus.

16 NASA was some work we did for an X-ray
17 telescope they were going to launch that had to have
18 very precise analytical work done on chips they were
19 using.

20 The Air Force was to look at some chips that
21 had to be essentially fixed by removing areas
22 microscopically and generating microscopic jumper
23 cables to get around types of areas there that were
24 not working.

25 THE COURT: Mr. Block, I don't want to

1 interrupt your presentation. As you know, we have a
2 limited time period today, and, frankly, we spent
3 about 45 minutes, a little bit of it was about TEM,
4 but if you want to be helpful to me, I would like to
5 get to the substance of what we are doing today.

6 MR. BLOCK: I sure will, your Honor.

7 May I have a minute to address Dr. Longo's
8 work in litigation? I know it will be brought up on
9 cross.

10 THE COURT: That's fine. You are going to eat
11 into your own time before you get to what you want me
12 to hear.

13 Q. Dr. Longo, have you done work in litigation for
14 states, municipalities and state agencies including
15 ones you have named today?

16 A. Yes, sir.

17 Q. Relating to the analysis of asbestos?

18 A. I have.

19 Q. Have you been working for corporate defendants
20 in analyzing materials for asbestos including General
21 Electric?

22 A. Yes, sir.

23 Q. Has General Electric come to you when there was
24 an allegation that there was asbestos that would be
25 released when people used their hair dryers, and have

1 you done that analysis for General Electric?

2 A. Yes, sir I have.

3 Q. Have you done work for Scotts, Scotts
4 fertilizer, in cases where there was an allegation
5 their materials released asbestos into the air?

6 A. Yes, sir.

7 THE COURT: Can I get time periods for these
8 as well when you were doing that kind of work? For
9 instance, GE you mentioned. When did you do that?

10 THE WITNESS: The GE work has been in the last
11 five years.

12 THE COURT: All right.

13 Q. And Scotts fertilizer, was that a case where you
14 were the opposing expert where my law firm brought the
15 case?

16 A. Yes, sir.

17 Q. Where one of my law partners Moshe Maimon, he
18 took your deposition in that case; didn't he?

19 A. Yes, sir, he did.

20 Q. And you have done work on behalf of plaintiffs
21 and hired by plaintiffs law firms, like my firm Levy
22 Konigsberg. Correct?

23 A. That is correct.

24 Q. Are the methods that you used -- no matter if
25 you are hired by a corporation, a defendant in

1 litigation, a state agency or individual plaintiffs,
2 does your reliance on the generally-accepted methods
3 differ depending on who hires you?

4 A. No, it doesn't.

5 Q. Dr. Longo, I'm sure you will be asked, and I
6 think in the briefs in this case you may have been
7 referred to as the \$30 million man. Have you heard
8 yourself referred to as the \$30 million man by Johnson
9 & Johnson?

10 A. A number of times.

11 Q. Now, in the course of over 30 years, has
12 Materials Analytical Services, the company billed out
13 about \$30 million for work on behalf of plaintiffs in
14 asbestos litigation, which comes to about a million
15 dollars a year?

16 A. Yes, sir, it has.

17 Q. And does MAS have substantial expenses in terms
18 of the payroll of all those professionals that you
19 identified earlier?

20 A. Of course.

21 Q. Does MAS have to purchase the most state of the
22 art equipment, such as transmission electron
23 microscopy, to make sure its scientific methods use
24 the best equipment available?

25 A. We have to keep the equipment up to date or at

1 least modified to work up to date.

2 Q. How expensive is a state of the art TEM
3 microscope, the type MAS has to purchase from time to
4 time?

5 A. When we first purchased the ones we have, they
6 were a quarter of a million dollars. We purchased one
7 last year that was \$750,000, but determined that it
8 did not work as well as the older ones, and we sent it
9 back.

10 Q. Dr. Longo, quickly, and I want to note for the
11 Court it is in the tabbed notebook, if the Court
12 wishes to look at it.

13 We have your CV, and does your CV set forth
14 peer-reviewed articles you have written on asbestos
15 and other topics?

16 A. Yes, sir.

17 Q. And also scientific presentations you have
18 given?

19 A. Yes, it does.

20 Q. We have also included for the Court a tab 2,
21 which lists cases in which you have testified in which
22 there have been some sort of Daubert, Frye, or other
23 scientific challenge to your testimony. Is that a
24 list your office generated?

25 A. Yes, sir.

1 Q. We highlighted the rows in yellow on tab 2 that
2 relate to Johnson & Johnson cases.

3 The next slide, does this show 17 occasions
4 now where you have testified involving your findings
5 of asbestos in Johnson & Johnson's talc?

6 A. Yes, sir, it does.

7 Q. In those 17 cases did you testify about the same
8 generally-accepted methodologies that you used that
9 you are prepared to testify in this case and that you
10 have set forth in your expert report?

11 A. Yes, sir.

12 Q. And just to note, has it now been seven
13 states -- California, New Jersey, Missouri, Oklahoma,
14 South Carolina, New York, Kentucky -- were you in
15 Kentucky yesterday testifying?

16 A. In Louisville.

17 Q. Was that a Daubert hearing in that case?

18 A. Yes, sir.

19 THE COURT: Was that state court?

20 MR. BLOCK: Yes, sir.

21 THE COURT: New Jersey didn't follow Daubert
22 until last year.

23 MR. BLOCK: I think most of the courts follow
24 Daubert.

25 THE COURT: I understand you are not prepared

1 to represent every one of those states follow Daubert.
2 New Jersey did just change in the last year.

3 MR. BLOCK: Yes, I understand that.

4 Q. Dr. Longo, in terms of state versus federal
5 court, have you testified on many occasions in federal
6 court where there is a Daubert or Frye challenge to
7 your testimony before taking the stand?

8 A. Yes, sir.

9 Q. Is that listed on tab 2?

10 A. It is.

11 Q. Dr. Longo, I would like to ask you what is
12 asbestos, and I would like you to explain to the Court
13 what is on this slide. It has Table 3, "Chemical
14 Formulas For the Asbestos Minerals." What does this
15 slide show and where did this image come from?

16 A. The slide shows what the chemical formulas are
17 for these particular minerals. Asbestos is a trade
18 name, and it encompasses these specific minerals,
19 which are labeled asbestos if they are fibrous.

20 Q. This says "asbestos minerals," and it comes from
21 the McCrone Particle Atlas. What is that?

22 A. That was an atlas that just not only had
23 asbestos but provided a lot of information on how to
24 analyze minerals using polarized light microscopy.
25 Dr. Walter McCrone, in my opinion, during his time,

1 was one of the best microscopists in the world.

2 Q. Was Walter McCrone in terms of this particle
3 atlas, was he a consultant for Johnson & Johnson for
4 decades, including at the time of this publication in
5 1980?

6 A. I'm not clear he was actually a consultant. I
7 know his laboratory for decades, McCrone Associates,
8 did work for Johnson & Johnson. He pretty much was
9 running the McCrone Research Institute at a time after
10 -- about sometime in the '60s and '70s.

11 Q. We have circled three of these asbestos minerals
12 which shows the chemical formula for these asbestos
13 minerals. Why did we circle these three in particular
14 as it relates to Johnson & Johnson talc?

15 A. These are the three asbestos minerals that have
16 been identified over the years, not only by Johnson &
17 Johnson in their laboratories, but it's the general
18 type of asbestos that our laboratory is finding in the
19 talcum powder that's in Johnson & Johnson.

20 Q. Are these three types of asbestos minerals --
21 tremolite, actinolite, anthophyllite known as
22 amphiboles?

23 A. Yes, sir, they are.

24 Q. Are they specifically identified in the
25 published literature and in materials you rely upon

1 and that people in your field regularly rely upon as
2 being the types of amphiboles that are known as
3 asbestos minerals, these particular types of
4 amphiboles?

5 A. Yes, sir.

6 Q. Now, in terms of an asbestos mineral, and
7 whether it can be called asbestos or asbestiform, what
8 does this next slide show from the McCrone Particle
9 Atlas?

10 A. In order to be called asbestos, or if you want
11 to say asbestiform, this shows it has to be fibrous.

12 Q. So on one side it says, for example, fibrous
13 tremolite would be asbestos, and then does it say the
14 same thing for fibrous actinolite and fibrous
15 anthophyllite?

16 A. Yes, sir it does.

17 Q. If an asbestos mineral such as tremolite,
18 actinolite and anthophyllite is fibrous, is it
19 asbestos?

20 A. Yes, sir, it is.

21 Q. On the other hand, if it is non-fibrous, such as
22 non-fibrous tremolite, non-fibrous actinolite,
23 non-fibrous anthophyllite, would that be considered
24 asbestos?

25 A. No.

1 Q. In terms of fibrous, these asbestos minerals
2 like tremolite are fibrous, are there generally-
3 accepted methods that allow you to determine whether
4 it is fibrous?

5 A. Yes, sir, there are.

6 Q. If the asbestos mineral meets the chemistry of
7 asbestos and is in the shape of a fiber, as defined by
8 the generally-accepted methods, is it fibrous?

9 A. Yes. Using these methods, it has a specific
10 geometry to be called fibrous.

11 Q. We'll get to this in more detail.

12 But is this an example of a definition of
13 fiber from a generally-accepted method, specifically
14 the EPA AHERA method?

15 A. Yes, sir.

16 Q. Here do they define fiber as being at least
17 0.5 microns in length and having an aspect ratio of at
18 least 5-to-1?

19 A. Yes, it does.

20 Q. What is a "micron"?

21 A. A micron is one -- is the distance equal to 1
22 millionth of a meter. If you think about a yard
23 stick, and a meter is approximately 3.3 feet, you
24 would have to slice that 3.3 feet 1 million times
25 evenly, and that would give you 1 micron or

1 1 micrometer.

2 Q. One more requirement here in the EPA AHERA, it
3 says:

4 "And substantially parallel sides," and so
5 according to EPA AHERA is fiber defined as at least
6 0.5 microns in length and having an aspect ratio of
7 5-to-1 or greater and substantially parallel sides.

8 A. Yes, sir.

9 Q. In terms of the aspect ratio, can you explain to
10 the Court what that means? It talks about length
11 versus width.

12 A. The aspect ratio is nothing more than, say, this
13 laser pointer. The length has to be five times equal
14 to or five times greater than the length or the width.
15 You take the length, divide it by the width; that will
16 give you the aspect ratio.

17 Q. Now, is it important to understand in terms of
18 understanding the generally-accepted test methods that
19 asbestos fibers are very small?

20 A. Small in that you cannot see -- you cannot
21 visually see single asbestos fibers because they are
22 too small for the resolution of your eyes. Here is a
23 penny. They have two or maybe rice grains which you
24 can see. Here we have a human hair and a human hair
25 has a diameter on average -- some lower, some higher

1 -- of 100 micrometers. Your eye can see a human hair
2 that 100 micrometers allows you to visualize it. Here
3 we have chrysotile asbestos which looks like some
4 white dots.

5 Q. That's right in front of Abe Lincoln's mouth?

6 A. Right here. What you see, there is thousands
7 and thousands of fibers, not individual fibers. Since
8 the width of an chrysotile asbestos fiber is
9 approximately .05 micrometers, so it is essentially
10 almost a thousand times thinner than a human hair.
11 That's what we are dealing with when we are making
12 these measurements.

13 Q. Dr. Longo, why does talc --

14 MS. BROWN: Your Honor, I have an objection to
15 this document as not being disclosed either in his
16 report or his reliance list.

17 MR. BLOCK: Your Honor, we have a reference we
18 can give the Court. Your Honor, this was No. 117 on
19 appendix A for Dr. Longo. And Leigh O'Dell can talk
20 further about it. It is part of a meet and confer
21 process. There was no objection to 117 and we relied
22 upon that.

23 MS. BROWN: Your Honor, we subsequently raised
24 the issue with your Honor where you made the ruling,
25 of course, that any supplemental material that was

1 available at the time of the report but not included
2 in the report or listed at the time could not be
3 included at this point, and this document falls
4 squarely into that category.

5 MS. O'DELL: Your Honor, if you recall, during
6 our conversation on Friday afternoon, I asked if an
7 objection was raised to a particular document is that
8 fair, and you said if there is no objection, you may
9 use it. That is the decision we made to put it in.

10 THE COURT: Take it out.

11 BY MR. BLOCK:

12 Q. Without reference to the document, did you come
13 up with the idea that talc should be tested for
14 asbestos or is that something represented in the
15 peer-reviewed literature going back many decades?

16 A. At this time, depends on what type of talc. It
17 goes back many decades for industrial talc. We have
18 been testing that for many years.

19 For cosmetic talc there was essentially --

20 THE COURT: Your lab has been testing for many
21 years.

22 THE WITNESS: It is the royal "we."

23 THE COURT: You asked him the question about
24 -- your question was: Did you come up with the idea
25 talc should be tested?

1 MR. BLOCK: I withdraw the question and I'll
2 rephrase it.

3 BY MR. BLOCK:

4 Q. In general, why does talc, a mineral that's
5 mined from the earth, need to be tested for asbestos?

6 A. In general, because of the accessory minerals
7 associated with talc that is typically either what we
8 call the tremolite solid solution series or the
9 anthophyllite solid solution series, and, in some
10 cases, chrysotile asbestos. That has been mined in
11 talc mines for some time.

12 Q. In contrast, a raw material such as cornstarch
13 that has been used by Johnson & Johnson in a baby
14 powder called Cornstarch Baby Powder, does cornstarch
15 need to be tested for asbestos?

16 MS. BROWN: Objection. Lacking foundation.
17 This is outside of his opinions. He tested J&J
18 products. He is not a mineralogist or a geologist.
19 He never tested cornstarch. I think we are going a
20 little far afield with these questions.

21 THE COURT: Mr. Block, it was not explored by
22 him. Let's move on.

23 BY MR. BLOCK:

24 Q. Let's talk about the testing Materials
25 Analytical Services did for the MDL as set forth in

1 your report, which is tab 9 in the notebook that we
2 have provided.

3 Just in general, just to summarize, did
4 Materials Analytical Services test 71 samples that
5 consisted of 56 -- Johnson's Baby Powder or Shower To
6 Shower talc product containers, as well as 15
7 historical talc samples that represented talc that was
8 used in Johnson & Johnson talc products?

9 A. Yes, sir. Just to be clear, the 71 -- or
10 samples that came from 71 individual containers or
11 from the railroad car. There was one MDL sample that
12 had two samples from the same container. That would
13 have made it 72 total samples.

14 Q. Were these samples that to your understanding
15 were produced as part of the discovery process in this
16 MDL?

17 A. Yes, sir.

18 Q. Is it your understanding those product samples
19 were retained by Johnson & Johnson and Imerys during
20 the time of their existence and produced in the MDL
21 for testing by both sides?

22 A. Yes, sir, that's my understanding.

23 Q. In terms of the talc that's contained in the
24 containers of Johnson & Johnson's products you tested
25 and the source talc that you tested, did it include

1 Vermont talc?

2 A. It did.

3 Q. Is it your understanding that Vermont talc was
4 used to make Johnson & Johnson talc products from
5 approximately 1967 until approximately 2003?

6 A. Yes.

7 Q. Is it your understanding before 1967 and going
8 back many decades Johnson & Johnson used Italian talc
9 with the exception of a few years during World War II?

10 A. Yes, sir, that's my understanding.

11 Q. Is it your understanding starting in
12 approximately 2004 going to the present, that Johnson
13 & Johnson has used Chinese talc?

14 A. Yes, sir.

15 Q. Let's talk about the methods that Materials
16 Analytical Services used for testing Johnson &
17 Johnson's talc for asbestos.

18 Did Materials Analytical Services use test
19 methods using the polarized light microscope?

20 A. Yes.

21 Q. And the transmission electron microscope
22 pursuant to generally-accepted methods that MAS and
23 yourself published on in the peer-reviewed literature?

24 A. Yes, sir.

25 Q. As we move forward, will we be talking about

1 some of these studies and how the methods were applied
2 to this case, including a publication in Cancer
3 Research in 1995 and other publications that are shown
4 here and included in tabs 10, 11 and 12 for the Court?

5 A. That is correct.

6 Q. Now, in terms of the key concepts for testing
7 asbestos and talc, can you talk about the first two
8 concepts and how they influence the third item which
9 is limit of detection/sensitivity?

10 A. The preparation method is key to determine how
11 well or sensitive the analysis is going to be for both
12 PLM and TEM. The analytical tools for PLM and TEM are
13 the best instruments for doing this for asbestos. It
14 has its strengths and its weaknesses. But it's all
15 about the preparation on how sensitive your results
16 are going to be in the TEM and PLM.

17 Q. In laymen's terms, does the preparation method
18 relate to whether you are just going to put the talc
19 that comes out of the container under the microscope
20 or whether you are going to follow some other
21 generally-accepted procedure preparing the talc sample
22 in some way before you look at it under the
23 microscope?

24 A. Yes. You could do both. But for the TEM
25 analysis, the best method is to try to concentrate the

1 potential amphibole asbestos that might be present so
2 that you could remove the interference of all the talc
3 that causes a problem with the analysis.

4 Q. Did you use a preparation method in testing
5 Johnson & Johnson's talc for asbestos known as the
6 Heavy Liquid Separation Method?

7 A. Yes, sir, we did.

8 Q. Was there a publication in the peer-reviewed
9 literature by Doctor Alice Blount published in 1991 in
10 a journal called Environmental Health Prospectus?

11 A. Yes, sir.

12 Q. Is that part of the National Institute of
13 Environmental Health Sciences, which is part of the
14 U.S. Department of Health and Human Services?

15 A. Yes, sir, it is.

16 Q. At the time is it listed at the bottom of the
17 article that Dr. Blount at that time was a professor
18 and researcher in the Rutgers Department of Geology?

19 A. Yes, sir.

20 Q. What did Dr. Blount -- if you could quickly sum
21 up, what did Dr. Blount report in this peer-reviewed
22 study about the heavy liquid separation method as it
23 specifically relates to testing talcs for amphibole
24 types of asbestos?

25 A. What she reported, that using this separation

1 method increased the sensitivity by removing a lot of
2 the talc particles. She estimated maybe 1 amphibole
3 potential for every, I think it was, 100,000 talc
4 particles.

5 So she reported how it increased the
6 sensitivity and allowed her to analyze it in a much
7 more efficient way, and showed that it is there, and
8 by removing the talc, first, it caused her to be able
9 to report higher sensitivities for the analysis using
10 polarized light microscopy.

11 Q. We have an animation which is hopefully going to
12 run. What are we looking at in this animation?

13 A. We are looking at a test tube. It shows if you
14 put talc in it and if you then put the heavy liquid
15 density in, then mix the talc up in the heavy liquid
16 density, and put it into a centrifuge, spin it, and
17 because of the density of the liquid, anything that
18 has a lower density like talc will go to the surface.
19 Anything that has a heavier density like the amphibole
20 asbestos will go to the bottom of the test tube. So
21 you are concentrating the amphibole minerals and other
22 minerals that have the higher density at the bottom,
23 which makes the analysis more sensitive and more
24 efficient.

25 Q. Now, is amphibole asbestos, particularly the

1 types tremolite, anthophyllite and actinolite, the
2 most common types of asbestos found in talc?

3 A. Yes, sir. It is the anthophyllite series and
4 the tremolite series. That is the most common. Then
5 chrysotile can be found also. For amphiboles, it is
6 the tremolite series and anthophyllite series.

7 Q. Is the idea here just in laymen's terms that you
8 put the heavy liquid into the tube, you centrifuge it
9 and it causes the heavy minerals, which would include
10 certain types of amphibole asbestos, to sink to the
11 bottom, and results in the talc which is lighter to
12 float to the top?

13 A. Yes.

14 Q. Then in terms of what you are analyzing, are you
15 then analyzing this tip at the bottom where the
16 amphibole asbestos is more likely to be, if it is
17 present, and can be detected by the method?

18 A. Yes. That's what we removed to put onto the
19 filters we are preparing; or the glass slides we're
20 preparing for both polarized light microscopy as well
21 as transmission electron microscopy.

22 Q. This heavy liquid preparation method for testing
23 talc for asbestos, was it published in the open
24 literature for the first time to your knowledge in
25 1991?

1 A. To my knowledge, that's when it was published
2 for analyzing talc for asbestos. Heavy liquid density
3 separation has been used for years and years and years
4 in the mineral industry to remove different density
5 minerals.

6 Q. Did it come to your attention as the result of
7 litigation against Johnson & Johnson, including this
8 case, in fact Johnson & Johnson had been using
9 internally with its consultants the heavy liquid
10 preparation method going back to the 1970s?

11 A. Yes, sir. As far as I can tell, it was first
12 developed specifically for talc in 1973, I believe it
13 was, or 1974.

14 Q. Were there a number of consultants where Johnson
15 & Johnson was having confidential work done where
16 those consultants were using the heavy liquid
17 separation method to identify asbestos in talcs used
18 by Johnson & Johnson for its products?

19 A. It is either using heavy liquid density or
20 another type of concentration method such as flotation
21 to try to remove the fines to increase the
22 sensitivity.

23 Q. Let's look at one example, if we could, for the
24 Court.

25 Is this a confidential memo produced by

1 Johnson & Johnson in this case, subject to a
2 protective order, that shows the use of the heavy
3 liquid separation preparation method on Vermont talc
4 for Johnson & Johnson in 1974?

5 A. Yes, sir, it does.

6 Q. Dr. Reynolds states here that

7 "For the reasons described above, a
8 concentration technique is mandatory because it brings
9 the amphiboles into a reasonable concentration range
10 for optical or other methods of analysis."

11 What is a "concentration technique" and is the
12 heavy liquid separation method an example of a
13 concentration technique?

14 A. "Concentration technique" is you concentrate one
15 type of mineral and remove the other. Panning for
16 gold is a concentration technique using water. Gold
17 sticks to the bottom of the pan as they swirl it, and
18 they're removing the dirt and other materials that are
19 lighter than gold, lower density, as they pour the
20 water out. They keep doing that until they removed
21 everything, and, hopefully, they found some gold
22 flakes. That's, of course, looking for something
23 different but using the same concept.

24 Q. Based upon the testing you have done on testing
25 Johnson & Johnson's talcs for asbestos, do you agree

1 with Dr. Reynolds' statement way back in 1974 that a
2 concentration technique, such as the heavy liquid
3 separation method, is mandatory in order to do the
4 most reliable and sensitive analysis to determine if
5 there is amphibole asbestos present in talc?

6 A. I agree with that statement.

7 Q. Why?

8 MS. BROWN: I object to the extent Dr. Longo
9 is now interpreting what the person who wrote this
10 statement back in the 1970s meant. I think it goes
11 beyond any evidence in the document of a testing
12 method and it is well outside his area of expertise,
13 and now he is speculating what this person meant.

14 MR. BLOCK: Your Honor, I can go to the next
15 question.

16 THE COURT: Okay.

17 BY MR. BLOCK:

18 Q. In terms of the test method, did Dr. Reynolds
19 provide a figure that showed the heavy minerals
20 sinking to the bottom and the talc floating to the
21 top?

22 A. Yes. That's a test tube; it is a centrifuge
23 tube. It shows, after the spin process, they now have
24 separated out the different density minerals talc at
25 the top, the heavy minerals at the bottom, and he's

1 going to take that plunger and pull it up and remove
2 the top portion and go through several washes to make
3 sure they have all the heavy minerals at the bottom.

4 Q. Can you compare -- I guess what you did, you
5 have your tube, and you showed a depiction of how you
6 did the heavy liquid separation method versus what is
7 described in the confidential memo from Dr. Reynolds
8 to Johnson & Johnson in 1974.

9 A. That is a centrifuge tube. It doesn't have
10 anything in it and that red line shows that instead of
11 using a stopper rubber plug and pull out, we use one
12 of the things that is in that paper tray. We flash
13 freeze the tip in liquid nitrogen, and remove the tip,
14 just the bottom tip of the test tube, and then wash
15 that out instead of using a rubber plug type
16 apparatus.

17 Q. Dr. Longo, in terms of what Dr. Reynolds did,
18 did he use the heavy liquid separation method and use
19 the centrifuge, as you described you did in your own
20 testing?

21 A. Yes, sir, it is the same basic method.

22 Q. Did he find fiber form amphiboles in the ore of
23 Vermont talc and the talc product?

24 MS. BROWN: Objection, your Honor. We are
25 going well beyond the stated words here, and Dr. Longo

1 is being asked to interpret this decades old document
2 well outside his area of expertise.

3 THE COURT: I have it. I have the document.
4 I think we are going to the method as opposed to the
5 findings. So let's move on.

6 Q. Back to the method, in addition to Dr. Blount
7 publishing on the heavy liquid separation method, did
8 the International Standards Organization in 2014
9 publish on the test method of the heavy liquid
10 separation method for use in testing talc for
11 asbestos?

12 A. Yes, they did. They issued this in 2014.

13 Q. You may be asked about certain ISO methods on
14 cross-examination by Johnson & Johnson, and I just
15 want to make clear: Is ISO, this particular ISO
16 standard 22262-2, is this the ISO method that is
17 specifically specified for testing talc for asbestos?

18 A. It is. It's the only method I know of that
19 specifically talks about talc and cosmetic talc and
20 how to test it.

21 Q. Does it say so on this slide this method 22262-2
22 is the ISO method to use in testing talc for asbestos?

23 A. Yes, sir, it does.

24 Q. We can see that in subD right there; can't we?

25 A. Yes.

1 Q. Did ISO also in 22262-2 on page 38, as shown in
2 this slide, actually produce a chart that tells you
3 what method to use depending on what type of material
4 you are testing for asbestos?

5 A. It does.

6 Q. Does it say that talc, cosmetic, which typically
7 may contain chrysotile, actinolite, and tremolite
8 asbestos is supposed to be tested in accordance with
9 this particular ISO provision 22262-2.

10 A. Yes, sir, it does.

11 Q. Does it say what is the optimal analytical
12 procedure used in testing talc for asbestos in the
13 last column?

14 A. It says to use centrifuge with the heavy liquid
15 separation as described, same concept as described by
16 Dr. Blount.

17 MS. BROWN: Your Honor, I would object to
18 counsel's characterization of this document as
19 typically found in talc. The title of the column is
20 "typical asbestos type if asbestos is present."

21 THE COURT: I read the heading. I'm aware.
22 Thank you.

23 Q. It says here, "For amphibole either
24 centrifugation and heavy liquid" -- withdrawn.

25 Did you do what ISO 22262-2 specifies as the

1 optimum analytical procedure for testing talc for
2 asbestos?

3 A. Yes.

4 Q. Is it set forth right there on the last column
5 on the right under "Optimum Analytical Procedure"?

6 A. Yes.

7 Q. If we look at the specifics of ISO 22262-2 at
8 page 29 and 30, does it tell you how to do the heavy
9 liquid separation when testing talc for amphibole
10 asbestos?

11 A. Yes, sir. It both tells you how to prepare the
12 sample and then it tells you to go to the 22262-1 the
13 companion methods on this on how to quantify and
14 identify the asbestos amphiboles.

15 Q. I think that's an important addition. I want to
16 make sure that's understood here.

17 THE COURT: Let's take a short break.

18 THE DEPUTY CLERK: All rise.

19 (Recess.)

20 (Continued on the next page.)

21 ///

22

23

24

25

1 THE DEPUTY CLERK: All rise.

2 THE COURT: Thank you.

3

4 **WILLIAM E. LONGO**, resumed.

5

6 DIRECT EXAMINATION (continued)

7 BY MR. BLOCK:

8 Q. Dr. Longo, comparing the 22262-2 heavy liquid
9 separation method set forth there that we could see,
10 and if we look at your report on page 10, did you
11 follow that preparation method as set forth in ISO?

12 A. Yes, sir.

13 Q. Once you did the heavy liquid preparation method
14 on the talc samples, did you analyze the samples under
15 microscopes?

16 A. We did.

17 Q. We are short on time, and you could say a lot
18 about these things, but just give us a brief
19 description of polarized light microscopy and how it
20 works.

21 A. It uses light and it uses polarizers to get the
22 vibrational wavelengths of light to go in specific
23 direction. By doing that, you could cause the
24 minerals you are looking at to demonstrate different
25 characteristics that allow you to identify it,

1 everything -- how fast the light can go through the
2 crystal to if you move the crystal under these
3 polarized light filters, you have certain angles it
4 disappears, and you can determine the refractive
5 indices. It is the standard how you analyze it to
6 identify asbestos. The same method has been used for
7 literally over a century.

8 Q. What is briefly transmission electron
9 microscopy, and how does it compare to PLM, polarized
10 light microscopy in terms of the advantages and
11 disadvantages when you are testing talc for asbestos?

12 A. The advantages are it allows you to get a much
13 higher sensitivity. It allows you to identify the
14 asbestos fibers according to the rules using
15 microchemistry. It allows you to determine the
16 crystalline structure using the diffraction technique.
17 It doesn't use light. It uses electrons. So that
18 because you are using electrons, you could see much
19 smaller size asbestos fibers than you see in the
20 polarized light microscopy because you are using
21 light. It is a much more sensitive instrument, and it
22 is probably the instrument that should be used for the
23 analysis of asbestos for talc.

24 Q. Is there a general consensus in the scientific
25 community as set forth in the published methods as to

1 the three steps that have to be undertaken when doing
2 transmission electron microscopic analysis on a
3 material to determine whether it contains asbestos?

4 A. Yes, there is.

5 Q. We're looking at page 12 of your report, and I
6 circled step No. 1. That is step No. 1?

7 A. It is called morphology, the dimensions of the
8 fiber or bundle of asbestos you are looking at. Step
9 1 has to have an aspect ratio greater than or equal to
10 5-to-1. The length of the asbestos structure has to
11 be at least a half a micrometer in length or greater.
12 It has to have substantially parallel sides so that
13 each side of the asbestos structure essentially is
14 almost straight. You could have a little bit of
15 crookedness, but substantially parallel. That is Step
16 1.

17 Q. What is Step 2 as shown in your report?

18 A. Step 2 is once you have made, that you can see
19 and measure that Step 1 is satisfied, you perform
20 mineral chemistry called energy dispersive X-ray
21 analysis to determine the chemistry of that particular
22 asbestos structure. So it gives you the ability to do
23 that. That's Step 2.

24 Q. What is Step 3 as shown in the slide and in your
25 expert report?

1 A. Step 3 is to perform what's called selected area
2 electron diffraction or SAED, which gives you
3 information on the crystalline structure of that
4 asbestos structure.

5 Q. Have you published in the peer-reviewed
6 literature on this generally-accepted three-step TEM
7 method?

8 A. Yes, sir. The first publication would be in
9 1995 when we analyzed these Kent Micronite cigarettes
10 from the fifties that used crocidolite and other
11 fibers in the filter.

12 Q. In doing that analysis that you published on the
13 peer-reviewed literature, did you have to determine
14 which fibrous materials in the filter of Kent
15 cigarettes were asbestos and were not asbestos?

16 A. Yes, sir.

17 Q. It's right here on the image we could see that
18 you looked at the morphology by transmission electron
19 microscopy you did the chemistry analysis called EDXA,
20 and you did the third step SAED, and you said,
21 "According to EPA protocols," and you cited EPA AHERA.
22 Is that correct?

23 A. That's correct.

24 Q. Is EPA AHERA one of the generally-accepted
25 methods you applied in this case in determining

1 whether there was asbestos in Johnson & Johnson's
2 talcs?

3 A. Yes.

4 Q. To look at another example, was there a
5 conference put on by Dr. Irving Selikoff at Mount
6 Sinai in 1991 which was called "The Third Wave of
7 Asbestos Disease"?

8 A. Yes.

9 Q. Am I holding up the book in my hand right now?

10 A. You are.

11 Q. Did the contributors to this conference and this
12 publication of this book include many of the leaders
13 in the sciences of asbestos, including Dr. Irving
14 Selikoff, Dr. Philip Landrigan, head of occupational
15 medicine at Mount Sinai?

16 A. Yes.

17 Q. Did you and Dr. Victor Roggli have an article
18 published in this third wave book?

19 A. Yes, sir.

20 Q. In that article, did you perform the three-step
21 TEM analysis that you used in testing Johnson &
22 Johnson's talc for the presence of asbestos?

23 A. Yes, sir, we did.

24 Q. If we look at the slide there, can we see the
25 three steps: The morphology by TEM, looking at the

1 chemistry with the EDS, which is also called EDXA, and
2 looking at the crystalline structure, which is SAED?
3 Is that right?

4 A. Yes, sir.

5 Q. Without going through the details of the study,
6 and the Court has this at tab 10 A, did you determine
7 in this study -- did you make findings of tremolite
8 asbestos fibers based upon the same three-step TEM
9 method that you are using in this case?

10 A. Yes, we did.

11 Q. Similar to this case, was one of the tests you
12 did a substance where when you went to test it, you
13 didn't know if it had asbestos or not, you had to
14 determine whether it had asbestos and then what types
15 of asbestos and other minerals?

16 A. Correct, for both the lung tissue and plaster
17 sample.

18 Q. Now, have you also published in the
19 peer-reviewed literature using these
20 generally-accepted methods for transmission electron
21 microscopy and polarized light microscopy that you've
22 used in this case on minerals that contain asbestos as
23 a contaminant as opposed to the product being designed
24 to contain asbestos?

25 A. Yes. Instead of calling it a contaminant, an

1 accessory mineral comes along with the nonasbestos
2 portion mineral. In this case, it is Libby, Montana
3 vermiculite.

4 Q. The article is here, if the Court wishes to see
5 more details, but in short, did you identify amphibole
6 asbestos and, in particular, fibrous tremolite and
7 fibrous actinolite, and other amphibole asbestos in
8 this mineral that's mined from the ground called
9 vermiculite?

10 A. Yes, and also richerite and winchite, which are
11 found in the Libby Montana vermiculite mine.

12 Q. As you did in this case, is one of the
13 generally-accepted methods you used the EPA AHERA
14 method?

15 A. Correct, for the TEM analysis as well as the
16 bulk analysis.

17 Q. And similar to this case, were you publishing
18 here in the peer-reviewed literature on the analysis
19 of a mineral where you found -- it says "often less
20 than 0.1 percent asbestos"?

21 A. Yes, sir.

22 Q. And did you publish in the peer-reviewed
23 literature, even though the material contained less
24 than 0.1 percent asbestos, that you determined that it
25 says here, "significant exposures can still occur that

1 can be in excess of current regulatory exposure
2 limits"?

3 A. Yes. Based on the actual studies we did in this
4 paper.

5 Q. Now, in terms of the three steps, this
6 three-step TEM process, is this really the general
7 consensus that can be found in many methods including
8 ASTM 5755, the method where you led the authorship of
9 that?

10 A. Yes. When we say morphology, the same counting
11 rules, the one aspect ratio or greater, and so on.

12 Q. I want to talk to you about the development of
13 the EPA AHERA method and the relevance of that in this
14 case. Okay?

15 A. Yes, sir.

16 Q. When the EPA AHERA method was developed and
17 promulgated in 1987, did the EPA convene a committee
18 of leading microscopists from private and federal
19 laboratories?

20 A. They did.

21 Q. As a result of the convening of that committee,
22 did the EPA choose a test method to be used for EPA
23 AHERA?

24 A. They did.

25 Q. Is that the test method that's used when

1 asbestos is abated from schools and buildings to
2 assure that once you do the analysis, it is safe for
3 children and building occupants to go back in the
4 building?

5 A. Yes, sir.

6 Q. And it says here the EPA chose to require TEM
7 analysis for four reasons, and it lists them there.
8 What is your understanding of I guess the development
9 of the AHERA method and what is stated here in the
10 preamble of the regulation?

11 A. The development was done through essentially
12 taking what everybody calls the Yamate method and
13 expanded that into what essentially became the AHERA
14 method. It follows Yamate with some modifications.

15 Q. Just to be clear, and you may be asked on
16 cross-examination about the Yamate method, was that
17 developed earlier in time in 1984?

18 A. Essentially it was initially developed in 1981
19 and published as a draft method in 1984. It was never
20 -- it's been only a draft method for EPA and EPA never
21 sent it out as an official method.

22 Q. In terms of the Yamate method, when it came time
23 in 1987 for the EPA to formally adopt a method for TEM
24 testing materials for asbestos, did they adopt EPA
25 AHERA and the method set forth there in 1987?

1 A. Yes, sir, they did.

2 Q. Is that still the EPA AHERA method that exists
3 today in 2019?

4 A. Yes.

5 Q. Now, we looked at this earlier, and I want to go
6 through the general consensus on Step 1, in looking at
7 the morphology, the shape of the structure and the EPA
8 AHERA is the 5-to-1 aspect ratio and the other details
9 you talked about earlier. Correct?

10 A. Yes, that's pretty much the same counting rules
11 for all the standard TEM methods, the American Society
12 of Testing Materials, International Standard
13 Organization, and EPA. They all use the counting
14 rules to determine the morphology.

15 Q. Does the preamble to the EPA AHERA regulations
16 discuss why the EPA decided to have a 5-to-1 aspect
17 ratio requirement for determining that a material is
18 asbestos assuming the other steps of the method are
19 satisfied?

20 A. Yes, sir. They have published why they picked
21 5-to-1.

22 Q. And here it says:

23 "It is consistent with the panel of
24 microscopists' observations that asbestos structures
25 have aspect ratios equal to and greater than 5-to-1,

1 whereas the majority of nonasbestos structures
2 minerals and particles -- for example, Gypsum -- have
3 aspect ratios of less than 5-to-1."

4 Do you see that?

5 A. I do.

6 Q. Is that consistent with your opinion and the
7 general scientific consensus in the scientific
8 community?

9 A. Yes, it is.

10 Q. If we go to the next slide, which is tab 22, Dr.
11 James R. Millete, did he publish in the peer-reviewed
12 literature about the importance of the 5-to-1 aspect
13 ratio?

14 A. Yes, sir, he did.

15 Q. What does he say and what, if at all, do you
16 rely upon in terms of your expert opinions in this
17 case?

18 A. Well, he states from earlier work by Campbell in
19 the Bureau of Mines, where they state that the best
20 indicator aspect ratio discriminator for asbestos
21 versus nonasbestos fibers is this 5-to-1 aspect ratio
22 used in these TEM methods. Again, we're talking about
23 transmission electron microscopy for all these
24 different methods that use that same definition for an
25 asbestos fiber for the morphology and aspect ratio.

1 Q. Going back to the previous slide, does it
2 indicate some commentators, some people who
3 participated in the EPA AHERA regulation process
4 suggested that the aspect ratio should really be
5 10-to-1?

6 A. Yes. As it states right there.

7 Q. Was that rejected by the EPA for the reasons set
8 forth right there in the preamble the Court could find
9 at tab 20 of the notebook?

10 A. Yes, it was.

11 Q. So in terms of the general consensus of using
12 the 5-to-1 aspect ratio, substantially parallel sizes
13 of at least 0.5 microns in length, do we see that in
14 ASTM 5755 as well?

15 A. Yes. This is the standard method for most all
16 your transmission electron microscopy protocols.

17 Q. Looking at ISO 22262-1 and -2, I want to ask you
18 about this, Dr. Longo. It says, "Fiber elongated
19 particle which has parallel or step sides."

20 Do you see that?

21 A. Yes, sir.

22 Q. What does "step sides" mean?

23 A. If you go down the fiber there may be a step
24 down showing where another fiber has broken and you
25 have a continuation. So it is like a step down, one

1 step down. Sometimes you could have two steps down.

2 Q. It says:

3 "Note: For the purpose of this part of ISO
4 22262-2, a fiber is defined to have an aspect ratio
5 greater than or equal to 3-to-1."

6 Do you see that?

7 A. Yes, sir.

8 Q. Now, why did you apply the 5-to-1 aspect ratio
9 requirement in applying ISO 22262 in testing Johnson &
10 Johnson's talc if it has a note here saying you could
11 have 3-to-1?

12 A. We wanted to stick with the standard counting
13 protocols in all these different TEM methods including
14 the ISO 13794, if I recall correctly. That also has
15 greater than or equal to 5-to-1 aspect ratio as well
16 as particle sides.

17 Q. Is the 5-to-1 aspect ratio you used more
18 restrictive?

19 A. Than 3-to-1, yes, sir.

20 Q. In terms of the reference to ISO 13794, does it
21 reference the 5-to-1 aspect ratio that we have been
22 discussing today?

23 A. Yes, it does.

24 Q. Is that another reason why you used it, because
25 it is stated and adopted and incorporated there, and

1 it is also more conservative and consistent with the
2 scientific consensus?

3 A. Correct.

4 Q. Let's go through some examples of your testing
5 in this case.

6 MR. BLOCK: And here, your Honor, we are
7 looking at a 1978 Johnson's Baby Powder sample.

8 Q. And let's go through Step 1.

9 What are we looking at here, and does it
10 satisfy Step 1?

11 THE COURT: Why don't you identify where this
12 is located, please.

13 MR. BLOCK: This is located in tab 9 A of your
14 notebook. It is also located in Dr. Longo's test book
15 binder, which is Exhibit 2, and we have the Bates
16 numbered page on there for your reference.

17 Q. Dr. Longo, what are we looking at here in terms
18 of does it satisfy Step 1 of the generally recognized
19 TEM method?

20 A. This is an anthophyllite solid solution series
21 asbestos structure. If we go through the morphology
22 requirement, this structure is 35.4 micrometers long.
23 Most likely longer, but this is the edge of the grid
24 bar. So you can't see if it is laying on top. It has
25 a width of 1.8 micrometers. So the aspect ratio would

1 be greater than 5-to-1, and it has substantially
2 parallel sides. So it meets the definition of the
3 morphology for a regulated asbestos fiber, if we go
4 and do steps 2 and 3. But it has a morphology for a
5 potentially regulated asbestos fiber.

6 Q. And you actually calculated the aspect ratio,
7 and it is 19.7-to-1?

8 A. Correct.

9 Q. These are in the book for the Court at tab 9 A,
10 and we'll skip past the next two.

11 Do all of the asbestos structures that you
12 identified in Johnson & Johnson's talc meet the
13 morphology requirement of the 5-to-1 aspect ratio and
14 the other requirements we have talked about today?

15 A. Five-to-one aspect ratio or greater.

16 Q. Good. If we go to your test book, and we put an
17 excerpt at tab 9 A for the Court, do we see count
18 sheets for all of the work of your lab?

19 A. Yes.

20 Q. Let me stop here. This says the analyst is
21 Anthony Keaton who did the TEM analysis. Can you tell
22 the Court what training your analysts undergo before
23 they can perform TEM or PLM analyses at MAS and their
24 experience levels?

25 A. All our PLM analysts at one point in their

1 careers went to Chicago and studied at the McCrone
2 Institute to learn to do polarized light microscopy.
3 They come back from that training course and start off
4 slowly, simple samples, samples -- someone coming
5 behind them who's more experienced until they build
6 up, until you can feel comfortable with them, that
7 they are routinely doing the analysis correctly.

8 Our two primary PLM analysts right now have
9 almost 30 years of experience each. Combined,
10 60 years of experience. They still go through updates
11 and QC.

12 For TEM analysis we typically may send them to
13 a course in McCrone or MVA, if they are brand new; and
14 then it is almost a six-month period before they are
15 actually allowed to do samples on their own without
16 routinely coming right behind them.

17 THE COURT: What's the general education when
18 they come to you and get this training?

19 THE WITNESS: Generally they have a Bachelor's
20 degree in either biological science. Anthony Keaton
21 happens to be a geologist and mineralogist. Our PLM
22 analysts are geologists. So you don't have to have a
23 higher education, but they do; but they have to be
24 able to understand the physics of it. Usually this
25 takes a four-year degree in some sort of science so

1 they can understand what they are doing.

2 Q. Do you closely supervise the work of your
3 analysts including --

4 THE COURT: You asked about him personally or
5 people in his lab do it?

6 Q. How do you and/or others in your lab supervise
7 your analysts and particularly to the point where your
8 name goes on a test book that we have marked as
9 Exhibit 2 showing all the testing done?

10 A. We have management levels. We have the manager
11 of the PLM and the TEM who has 15 years of experience.
12 And what I do is come in and check and look at and
13 review in QC to tell what protocols you use. I don't
14 do the analysis on a daily basis but I will come in
15 and say: "Can I look at that? Let me see. Show me
16 that's really this." That's sort of my job now.

17 Q. We've talked about the morphology requirements,
18 Step 1. Can the Court see on the count sheets that
19 you then have to also do steps 2 and 3. You have SAED
20 and EDS. Before you could say it's asbestos you have
21 to do the steps. Right?

22 A. Yes, sir.

23 Q. Let's take a look at Step 2.

24 Step 2 you described generally earlier but is
25 this an example of a generally-accepted method EPA

1 AHERA requiring the analysis that allows you to
2 determine the chemistry of the mineral that's being
3 looked at?

4 A. That is correct.

5 Q. If we go to the next slide, on one side we have
6 -- is this called an EDXA spectrum?

7 A. Yes, EDXA spectra or spectrum. Typically it's
8 spectra.

9 Q. Does looking at the spectrum show you the ratios
10 and levels of different elements that are shown in the
11 mineral?

12 A. Yes, it does that.

13 Q. Looking at the EPA AHERA requirement, it says
14 here, "Compare spectrum profiles with profiles
15 obtained from asbestos standards. The closest match
16 identifies and categorizes the structure."

17 Is that what Material Analytical Services did
18 in this case in testing Johnson & Johnson's talc?

19 A. Yes. These profiles would be for anthophyllite,
20 typically the magnesium and silicon peak here. And
21 then you will have iron, depending on the chemistry of
22 the mine the anthophyllite is in. The more iron tends
23 to have higher iron in the anthophyllite.

24 Then we take this and compare it to the
25 standards.

1 Q. One of the arguments Johnson & Johnson has made
2 in this case is that MAS should have included the
3 numerical values of each element below the EDXA
4 spectrum. Is that something required in the AHERA
5 method?

6 A. It is not. It is a visual comparison to the
7 asbestos standards.

8 Q. Is that what MAS does?

9 A. Yes.

10 Q. Does MAS follow the AHERA method that's stated
11 there?

12 A. Yes, we do.

13 Q. Looking more at AHERA at tab 21, page 896, for
14 the Court it talks again about the EDXA spectra, and
15 it talks about a semiquantitative comparison with
16 these reference spectra. Is that what MAS does?

17 A. Yes. It is a visual comparison of these unique
18 spectras in which you use a Step 2 on the way to
19 identify it as either asbestos or not asbestos.

20 Q. In terms of the word semiquantitative comparison
21 with the EDXA spectra of the mineral that's identified
22 in Johnson & Johnson's talc versus the spectra of an
23 asbestos standard that MAS has in its lab, how is that
24 semiquantitative? Is there a semiquantitative? Do
25 you agree with that characterization?

1 A. It is. You are visually looking at the ratio of
2 two elements for anthophyllite magnesium and silicon.
3 It is about a 5-to-10 ratio. It can be a little
4 higher or a little lower. That's what the standards
5 show. You are only required to do a visual
6 assessment.

7 Q. Now, in ASTM 5755, the method you talked about
8 and gained the consensus of all those scientists, what
9 does that say about what you need to have in terms of
10 that EDXA spectra?

11 A. It says to "record at least one X-ray spectrum
12 EDXA for each type of asbestos observed per sample.
13 Attach the printouts at the back of the count sheet."

14 Q. I'm holding Exhibit 2 MAS's test notebook and
15 I'm turning, for the record, to Longo MDL 00878. Is
16 that exactly what MAS did, attach the X-ray spectrum
17 to the back of the count sheet when MAS analyzed
18 Johnson & Johnson's talc for asbestos?

19 A. Yes, we did.

20 Q. And does ASTM 5755 or EPA AHERA say you should
21 even give the numerical quantification of each
22 element?

23 A. No.

24 Q. So when defense counsel cross-examines you on
25 why this area below is blank, which could have the

1 quantitative results for the anthophyllite, what's
2 your response?

3 A. It's not required in these TEM analysis. The
4 EPA AHERA analysis, it's not required.

5 Q. And the ASTM?

6 A. It is not required for the ASTM and the ISO
7 method.

8 Q. In terms of your last statement, it is not
9 required or specified in the ISO method, we are
10 looking here at 22262-1. Correct?

11 A. Yes.

12 Q. And those procedures are incorporated in 22262,
13 which is specified for testing talc for asbestos. Is
14 that correct?

15 A. That is correct.

16 Q. And here it says for anthophyllite, this is the
17 example we are looking at, classify a fiber as
18 anthophyllite if -- and it talks about magnesium and
19 silica peaks are comparable in ratio to those of
20 reference anthophyllite, and in ISO does it talk about
21 setting forth the numerical values or looking at the
22 peaks and looking at whether the ratios of different
23 elements are comparable?

24 A. It is a visual comparison to the standards.

25 Q. Now, let's go to Step 3 in this example we are

1 looking at. We have what EPA AHERA says about -- I'll
2 withdraw the question.

3 Does the EPA AHERA method require SAED as Step
4 3?

5 A. Yes.

6 Q. We're looking at tab 21. Does EPA AHERA say how
7 you are supposed to do Step 3 of the TEM analysis?

8 A. After acquiring the -- I'll stick with SAED
9 pattern, you form a visual examination to determine it
10 belongs to one of the following classifications. Your
11 visual examination, you say it belongs to chrysotile,
12 which is serpentine; amphibole, what we are dealing
13 with amphibole, the asbestos amphibole, and non
14 asbestos, by visually examination of the patterns
15 because of their uniqueness.

16 Q. And on cross-examination I'm sure Johnson &
17 Johnson is going to ask you why didn't you do zone
18 access, something called zone axis, and is that
19 required by the EPA AHERA method?

20 A. In some cases, some of the analysts did perform
21 zone axis. Our mineralogists will tend to do it from
22 time to time, but it is not required. It is not a
23 required step in the EPA AHERA method other than a
24 typical what we'll call a d-spacing diffraction
25 pattern that allows you to say this is an amphibole.

1 Q. And did MAS follow the EPA AHERA method in the
2 way it performed the SAED Step 3 of the TEM analysis
3 in testing Johnson & Johnson's talc for asbestos?

4 A. Yes.

5 Q. If we look further at EPA AHERA on page 899 of
6 tab 21, does the method say that what a lab is
7 supposed to do, "verify identification of the pattern
8 by measurement or comparison of the pattern with
9 patterns collected from standards under the same
10 conditions"?

11 A. Yes.

12 Q. Did MAS follow that protocol?

13 A. Yes, they did.

14 Q. And in terms of ISO 22262-1, do they speak to
15 how to distinguish anthophyllite asbestos from talc?

16 A. From fibrous talc.

17 Q. Why is it important to do this SAED analysis to
18 make sure you properly distinguish between fibrous
19 talc and anthophyllite asbestos?

20 A. Because the EDXA pattern or the chemistry for
21 anthophyllite can be identical to the chemistry for
22 fibrous talc. So you have to do a third step. The
23 third step distinguishes between the fibrous talc and
24 anthophyllite asbestos.

25 Q. The ISO standard says here anthophyllite

1 asbestos, and I'm pointing to it, the middle of the
2 page, on the other hand, produces assorted spots
3 appearing and disappearing along layer lines as the
4 fiber is tilted using the goniometer, do you see that?

5 A. Yes, sir.

6 Q. What is a goniometer?

7 A. It is the ability to tilt your specimen in the
8 TEM. You can rotate it and go from zero to some
9 angle.

10 Q. Does the ISO test method say here use zone axis?

11 A. No.

12 Q. Does it say use dual zone axis?

13 A. No.

14 Q. Does MAS follow the ISO standard as one of the
15 means of distinguishing anthophyllite asbestos from
16 fibrous talc?

17 A. Yes, we did.

18 Q. Let's keep these words in mind:

19 "Anthophyllite asbestos produces assorted
20 spots appearing and disappearing along layer lines as
21 the fiber is tilted using the goniometer."

22 If we go to the next slide, is this Step 3 one
23 of the examples that we have been looking at in terms
24 of anthophyllite asbestos in Johnson & Johnson's talc?

25 A. Yes. These are two different angle diffraction

1 patterns of the same anthophyllite structure. We're
2 calling it anthophyllite asbestos because we have gone
3 through steps 1, 2 and 3.

4 On the left-hand side we have the row of
5 patterns, and what you are looking at there from the
6 dots -- going in this direction, these are the scatter
7 or diffraction of the electrons for the rows of atoms
8 that go and scatters between the atoms. It is called
9 diffraction from here to here. From here to here
10 would be the next layer of crystal. This is at zero
11 tilt. When the goniometer is tilted, you see that
12 one, this layer of spots is now missing and now has
13 appeared up here. This layer has become smaller,
14 these spots, and we have an additional layer. What we
15 are doing, we just changed the electron beam direction
16 on this particular area of the crystal.

17 Fibrous talc can't do that, and that's how you
18 make the distinction between the two.

19 Q. You just demonstrated the way in which MAS
20 distinguishes anthophyllite asbestos from fibrous talc
21 in analyzing Johnson & Johnson's talc?

22 A. Correct.

23 Q. Now, in terms of ASTM 5755, does it say what you
24 are supposed to do is record a typical electron
25 diffraction pattern and attach it to the back of a

1 count sheet?

2 A. Yes, sir.

3 Q. If we go to your book PSC Longo 2, and I go to
4 page 879 Longo MDL, and Longo MDL 880, is that exactly
5 what MAS did, did they follow the ASTM 5755 protocol
6 on that as well?

7 A. Yes.

8 Q. You mentioned "fibrous talc." If we look at the
9 ISO method, it talks about anthophyllite asbestos and
10 talc having similar chemistry by EDXA, but then it
11 says:

12 "ED, electron diffraction of talc produces a
13 pseudo hexagonal pattern that does not change as the
14 fiber is tilted using the goniometer."

15 Is that what it says?

16 A. Yes.

17 Q. What is being shown in this slide, and can you
18 compare it with what ISO is saying about how you
19 distinguish fibrous talc from anthophyllite asbestos?

20 A. Here is the fibrous talc structure. It meets
21 the definition of asbestos. It has all the right
22 geometry. Greater than or equal to 5-micrometers -- I
23 mean greater than or equal to 5-to-1 aspect ratio,
24 longer than .5 micrometers particle size; and when you
25 do the selected area electron diffraction, when they

1 say pseudo hexagonal, you can see the hexagonal
2 pattern. If you tilt the goniometer, that pattern
3 doesn't change.

4 Q. Is that pseudo hexagonal pattern, which is
5 characteristic of fibrous talcs circled in red on the
6 slide?

7 A. Yes, sir. Finishing this third step as per the
8 ISO protocol, you can now call what we are looking at
9 a regulated asbestos structure of the anthophyllite
10 solid solution series.

11 Q. Now, going back to this issue of zone access
12 SAED. ISO says here in 22262-1, analysis of
13 laboratory samples seldom requires zone axis
14 measurements.

15 Do you see that?

16 A. Yes, sir.

17 Q. Is there anything in this ISO standard that says
18 specifically that you should use zone axis or dual
19 zone axis for testing talc for asbestos?

20 A. No.

21 Q. And it says here:

22 "Seldom the laboratory samples in general
23 seldom requires zone axis measurements."

24 What is your understanding of that based upon
25 your expertise and experience?

1 A. That for the types of asbestos we are looking
2 at, beside the anthophyllite, which you should tilt
3 for the two diffraction patterns, either the tremolite
4 series or the anthophyllite series, is fairly
5 straightforward, you are not dealing with unknowns.

6 Q. Do the three steps that you have outlined in the
7 ISO method, in the EPA AHERA method, in the ASTM 5755
8 method, and following those three steps in the method
9 allow you to have reliably identified asbestos in
10 Johnson & Johnson's talc?

11 A. Yes, sir, it has.

12 Q. Looking at -- does Johnson & Johnson have its
13 own TEM method for testing asbestos in talc?

14 A. Yes, they call it the T.M. 7024.

15 Q. If we look at Johnson & Johnson's TEM method
16 that they use for testing talc for asbestos, did they
17 require any zone axis SAED?

18 A. No. They say measurement of amphibole SAED
19 patterns. You are measuring the D spacing, which we
20 do.

21 Q. If we go down to section 13.5 of Johnson &
22 Johnson's own TEM method that they use outside of
23 court, it says:

24 "If it is consistent -- if the SAED pattern is
25 consistent with an amphibole SAED pattern, then it is

1 examined by EDXRA to confirm the identification or to
2 identify the type of amphibole."

3 Do you see that?

4 A. Yes.

5 Q. Is that consistent with what MAS did in order to
6 identify amphibole asbestos in Johnson & Johnson's
7 talc?

8 A. It is.

9 Q. And it says here this is Johnson & Johnson's
10 test for asbestiform minerals. Do you see that?

11 A. Yes, sir.

12 Q. Are asbestiform minerals of the tremolite type,
13 anthophyllite type, and actinolite type asbestos?

14 A. Yes, it is.

15 Q. If we put all the steps together, the
16 morphology, the EDXA and the SAED, are your findings
17 of anthophyllite asbestos in Johnson & Johnson's talc
18 set forth in your report and the testing notebook
19 which is Exhibit 2?

20 A. Yes, sir.

21 Q. Let's talk about another sample tremolite
22 asbestos. Did you find another type of asbestos
23 called tremolite asbestos by TEM in some of the
24 Johnson & Johnson's talc products?

25 A. Yes.

1 Q. Was the morphology requirement meant for all
2 that asbestos you found of the tremolite type in
3 Johnson & Johnson's talc?

4 A. It was.

5 Q. Could we see the imagery that shows that?

6 A. Yes. This would be a step down structure as
7 described in the ISO method. I just wanted to show
8 what one would look like.

9 Q. It looks like there are three different fibers,
10 three different structures that are poking out of the
11 top of that. What is that?

12 A. Essentially, we have a bundle there that has
13 different amounts of individual fibers in it. That's
14 a tremolite asbestos structure.

15 Q. And in terms of the documentation of all this
16 testing, does it show where the asbestos structure was
17 found in the TEM grid, for example, in A-2, that it
18 was found in A-2?

19 A. Yes. That gives you a road map, if you want to
20 go back and have somebody say, I would like to go look
21 at that asbestos fiber you saw. You can easily go to
22 the grid box, and it will tell you what square inside
23 the sample holder that you found that structure.

24 Q. And, quickly, how small are these TEM grids and
25 how much talc is typically tested in a TEM analysis?

1 A. You can see a little scale up there. The
2 overall dimension of the TEM grid is 3 millimeters in
3 diameter. Inside that TEM grid you have what looks
4 like a miniature screen with the holes. That has been
5 edged. Each one of those grid openings is 100
6 micrometers by 100 micrometers. The amount of
7 material that goes onto a grid on the filter in this
8 case is 21 milligrams of sample that is distributed
9 throughout. So the amount on an individual grid
10 opening is very small.

11 Q. And did you follow all the steps that we talked
12 about earlier, the three steps of the
13 generally-accepted TEM methods in identifying
14 tremolite asbestos in Johnson & Johnson's talc
15 products?

16 A. Yes. In this case we have an element, calcium,
17 that distinguishes it as tremolite chemistry based on
18 the ratios of the magnesium, silicon and calcium.

19 Q. In terms of not having the quantity of each
20 element below the EDXA spectra, I want to ask you
21 about testing done by OSHA in February of 2019, and
22 how did OSHA determine there was tremolite asbestos in
23 a talc product on the market called Claires?

24 A. They used morphology in EDXA only to not perform
25 SAED, and this would be OSHA's analysis they supplied

1 to the FDA.

2 Q. In terms of how OSHA did it, it says they have
3 the EDXA spectrum for tremolite asbestos, and do they
4 set forth the quantification of the elements
5 characterizing tremolite as Johnson & Johnson is
6 arguing you should have done?

7 A. No, they didn't perform that. Nor did they
8 perform SAED.

9 Q. In terms of following all three steps, the TEM
10 analysis to find tremolite asbestos in Johnson &
11 Johnson's talc, did you do that?

12 A. Yes.

13 Q. Now, I want to pause here for a moment. Johnson
14 & Johnson in their cross-examination might say:
15 Dr. Longo, what you are identifying is non-asbestos.
16 Does EPA AHERA have a rule and a standard for what
17 non-asbestos is?

18 A. Yes, it does. It doesn't meet one of these
19 criteria, the morphology, the EDXA, the chemistry or
20 the electron diffraction pattern.

21 Q. So if it doesn't meet one of those three steps
22 that we have been through, set forth in EPA AHERA, is
23 it non-asbestos if it doesn't meet one of the three
24 steps?

25 A. You have to call it non-asbestos. You can't

1 have an asbestos structure that is too thick for the
2 electron beam to go through and you don't get the
3 diffraction pattern because the electron beam has to
4 be able to penetrate through the fiber to cause the
5 diffraction or scattering. What EPA says if you don't
6 get an ED pattern, you don't count it as asbestos.

7 Q. Let's say you have a particle of tremolite that
8 you could identify as tremolite based on the
9 chemistry, the EDXA. You can identify it as tremolite
10 based on the crystalline structure. But let's say the
11 aspect ratio is only 4-to-1 or 3-to-1. Under the EPA
12 AHERA, would that be non-asbestos because it doesn't
13 meet the morphology ratio?

14 A. I would not count that as asbestos.

15 Q. Would you refer to that as a tremolite cleavage
16 fragment?

17 A. We may but we will not put it in the count sheet
18 as regulated asbestos.

19 Q. So EPA AHERA says what's non-asbestos, and is it
20 your opinion to a reasonable degree of scientific
21 certainty, based upon the generally-accepted methods
22 that MAS followed, that all of the asbestos identified
23 by MAS in Johnson & Johnson's talc satisfied all three
24 steps of EPA AHERA method and the other
25 generally-accepted test protocols that we discussed?

1 A. Yes.

2 Q. Would any of the anthophyllite asbestos or
3 tremolite asbestos or actinolite asbestos that you
4 found in Johnson & Johnson's talc qualify as
5 non-asbestos under the EPA AHERA standard?

6 A. No.

7 Q. We talked about these methods. Let me ask you
8 quickly about Johnson & Johnson's own method.

9 Does Johnson & Johnson's own TEM method
10 specify the same three steps for TEM that you have
11 discussed with the Court?

12 A. Yes.

13 Q. Did you in fact follow a more restrictive
14 standard?

15 A. Yes, we did.

16 Q. In terms of the morphology whereas Johnson &
17 Johnson in their TEM method outside of court says you
18 can count as asbestos if it is greater than 3-to-1,
19 and did MAS apply a more restrictive standard?

20 A. Yes. The counting criteria we use from EPA and
21 others is greater than or equal to 5-to-1.

22 Q. Johnson & Johnson may say, Dr. Longo, there are
23 some samples where you only found one asbestos
24 structure. Have you been asked about that?

25 A. A number of times.

1 Q. And in Johnson & Johnson's own method, does it
2 say that this three-step TEM method is capable of
3 detecting a single fiber in the standard?

4 A. Yes, it does.

5 Q. In fact, the ISO method that is specified for
6 testing talc for asbestos, does that state that a
7 finding of one fiber of asbestos or one fiber bundle
8 of asbestos is sufficient to determine the sample
9 contains asbestos?

10 A. Yes.

11 Q. Do we see that there on page 7 of ISO 22262-2?

12 A. Yes, it says it is the limit of quantification
13 which is either one fiber or one bundle.

14 Q. Is that the generally-accepted scientific
15 standard?

16 A. It is the generally-accepted scientific standard
17 for these types of analysis where you have process
18 blanks and you can understand that you do not have
19 background or cross-contamination in the laboratory.

20 Q. Does MAS employ those scientific protocols to
21 assure that the asbestos found in Johnson & Johnson's
22 talc came from the talc and not from contamination?

23 A. Yes, it does.

24 Q. Dr. Longo, are there types of asbestos that were
25 used in general commerce where a company would buy

1 bags of commercial asbestos and incorporate it into
2 the products?

3 A. Yes.

4 Q. Was chrysotile the most common form of
5 commercial asbestos used historically in the United
6 States?

7 A. Yes. 95 percent of all asbestos products
8 contain chrysotile.

9 Q. Were there two commercial grade forms of
10 amphibole asbestos used in the United States called
11 amosite and crocidolite?

12 A. Yes. That made up the remaining 5 percent.
13 Amosite was 4.6 percent used in this country and
14 crocidolite was .4 percent.

15 Q. And the forms of asbestos that you found in
16 Johnson & Johnson's talc, anthophyllite asbestos,
17 tremolite asbestos, and actinolite asbestos, are those
18 commercial forms of amphibole asbestos or
19 noncommercial forms of amphibole asbestos?

20 A. They are noncommercial forms. Tremolite and
21 actinolite, I'm not aware of them using it in a
22 product; and anthophyllite mined in Finland, was used
23 in one specialty product that was a plastic pipe for
24 high pressure chemical processes that you need really
25 good acid resistance, but that's it.

1 Q. Is there some general definitions of asbestos
2 that are found in certain test methods including ASTM
3 5755 that we discussed that talk about asbestos or
4 asbestiform, meaning or having part of the definition
5 being high tensile strength and flexibility of the
6 mineral?

7 A. Correct.

8 Q. As to anthophyllite asbestos, tremolite asbestos
9 and actinolite asbestos, do those types of asbestos
10 have high tensile strength and flexibility?

11 A. No. They are almost classified as brittle.
12 They don't have flexibility. Therefore, you cannot
13 weave them. It is not a commercial type of asbestos.
14 Those definitions that are in every TEM method, PLM
15 method is a general definition for asbestos-added
16 products. It is not intended for all asbestos. The
17 main reason we know that -- I put the definition in
18 ours in the negotiation -- is there is no test for it
19 at the microscopic level. Therefore, it has to be a
20 general definition.

21 Q. So in terms of a test method, even though a
22 definition might say high tensile strength and
23 flexibility, is there any way of even testing that
24 with a microscopic asbestos structure?

25 A. No, it is impossible. You have to understand

1 they don't even define high tensile strength.

2 Q. If those were requirements, if it had to have
3 high tensile strength and flexibility in order to be
4 asbestos, even though there are no test methods for
5 that, would that essentially exclude known types of
6 asbestos, including anthophyllite asbestos, tremolite
7 asbestos, and actinolite asbestos that weren't used
8 for commercial purposes because they don't have those
9 attributes?

10 A. It would. There are test methods for tensile
11 strength, but the only way you can do that is go to
12 the mine and cut a very big piece of the asbestos
13 bundle, tape it to paper, and put it in what's known
14 as an Instron to test tensile strength.

15 Q. But is it part of generally-accepted TEM and PLM
16 methods?

17 A. No, it is impossible using those analyses, using
18 those two analytical tools.

19 Q. Let me go through this next section quickly.
20 I'm really trying to move along.

21 THE COURT: Just so you know, you will end at
22 noon. We talked about 2 1/2 hours. I know we took a
23 break. It will still give you more than 2 1/2 hours.
24 Look at the clock. You have 20 minutes.

25 MR. BLOCK: Thank you, your Honor.

1 Q. Under the established generally-accepted TEM
2 methods, if it is a fiber, a bundle, a cluster or
3 matrices, as long as the three steps of the TEM are
4 met, is it asbestos?

5 A. Yes.

6 Q. Okay. There has been discussions in the
7 briefing about identifying something as a fiber versus
8 a bundle. Under the standard TEM methods, including
9 EPA AHERA, are they both asbestos?

10 A. They are. One is not more asbestos than the
11 other. It is all regulated asbestos if it is a fiber
12 bundle or what have you.

13 Q. Is the same true under the other
14 generally-accepted methods including ASTM 5755, as we
15 can see on the screen right here?

16 A. Yes.

17 Q. They are asbestos structures if the test method
18 is met regardless of whether it is called a fiber or a
19 bundle or a cluster or a matrices. Is that correct?

20 A. That is correct.

21 Q. Johnson & Johnson has raised this co-efficient
22 of variation test which is attached to the Court's tab
23 52. I want you to briefly -- what did this show about
24 the ability of TEM analysts at MAS to accurately
25 identify the total structures of asbestos contained in

1 a talc sample?

2 A. This test was designed to measure the error rate
3 of the four TEM analysts counting and looking at the
4 same grid openings and determining how many asbestos
5 structures that they are seeing and identifying
6 compared to the next analyst and the next analyst and
7 the next analyst, and this all was done blind.

8 Q. What were the results of the comparison and
9 those analysts being able to identify the total
10 structures?

11 A. That the co-efficient of variation for the four
12 analysts showed there was an error rate of plus or
13 minus 6 percent.

14 Q. To reverse that, it was over 90 percent, what
15 would you say consistency?

16 A. Yes.

17 Q. Now, Johnson & Johnson put this chart in their
18 brief, and it depicts that in this test the four
19 analysts unanimously agreed on whether something was a
20 fiber or a bundle on only one occasion. Do you see
21 that?

22 A. Yes. Just for the tremolite, not for the
23 anthophyllite.

24 Q. Going to the next slide, did you calculate the
25 percentage of agreement among the analysts in

1 determining whether something was a fiber or a bundle?
2 A. Yes. They had a 72 percent agreement. The way
3 this is measured is not -- does everybody get it right
4 because there is no right. This is the analyst
5 looking at an unknown structure in making the decision
6 if it is a fiber or a bundle.

7 So if three analysts say it is a bundle and
8 one says it is a fiber, there is a 75 percent
9 agreement. It would be the same -- and I know this
10 didn't happen, but you have to think about suppose 100
11 TEM analysts looked at a structure and 95 of them said
12 it was a bundle, and five said it was only a fiber,
13 that doesn't make that 95 wrong. They would say
14 that's 95 percent agreement. That's how this is
15 evaluated for reproducibility.

16 Q. So there was 72.2 percent agreement on whether
17 the tremolite asbestos structure was a fiber versus a
18 bundle. Is that what it shows here?

19 A. Yes.

20 Q. And if we go to anthophyllite, Johnson & Johnson
21 did not put a chart on their brief about anthophyllite
22 asbestos, comparing identification of fibers versus
23 bundles; and does that show an 83.7 percent agreement?

24 A. 83.7 agreement if the structures are either a
25 bundle or a fiber.

1 Q. Did a laboratory called J-3 Resources conduct a
2 study to see if it could verify the presence of
3 asbestos structures detected in certain J&J talc
4 samples tested in the MDL?

5 A. Yes.

6 Q. And if we go to this slide here, is this a
7 summary of the analysis of J-3 as compared looking at
8 MAS' samples?

9 A. Yes. J-3 took our TEM grid and went and
10 reanalyzed the asbestos structures that we had already
11 analyzed and said was asbestos and verified what his
12 findings were independently of our finding for the
13 exact same asbestos structures.

14 Q. It says here J-3 verified the asbestos. 20 out
15 of the 22 asbestos structures identified by MAS, and
16 that's 91 percent. Correct?

17 A. Yes.

18 Q. And the two disagreements were that J-3
19 concluded that two of them did not have sufficiently
20 particle sides. Right?

21 A. That was his opinion.

22 Q. And did the J-3 lab follow the same three step
23 TEM method?

24 A. Yes.

25 Q. It says out of the 20 agreed-upon asbestos

1 structures, there was a high level of agreement
2 between MAS and J-3 about whether the asbestos
3 structure was a fiber or a bundle. Is that correct?

4 A. Correct.

5 Q. Just to be clear, if it is -- I'll withdraw the
6 question.

7 Under the three-step TEM that's
8 generally-accepted, does it make a difference whether
9 it is a fiber or bundle in terms of whether it is
10 asbestos?

11 A. It does not.

12 Q. Did J-3 Resources conduct their own testing of
13 some Johnson & Johnson talc powder Shower To Shower
14 samples?

15 A. Yes, MDL samples.

16 Q. Did they also apply ISO 22262, the protocol you
17 described to the Court today?

18 A. Yes.

19 Q. Did they find anthophyllite asbestos in 11 out
20 of the 16 samples?

21 A. Yes, they did.

22 Q. Did MAS conduct a test to see if it could verify
23 the presence of asbestos in those 11 samples that this
24 separate lab J-3 Resources found anthophyllite
25 asbestos in?

1 A. Yes. We verified their analysis.

2 Q. MAS found nine out of 11 samples where J-3 found
3 anthophyllite asbestos in fact did contain
4 anthophyllite asbestos. Is that correct?

5 A. Yes.

6 Q. What about the other two?

7 A. One, the grid was damaged. So we could not --
8 the asbestos structure was gone. These carbon films
9 on these grids are very sensitive to movement.

10 The second one we couldn't locate the asbestos
11 structure on the grid opening.

12 Q. In terms of the TEM test results at MAS, did MAS
13 detect amphibole asbestos in 42 of the 71 Johnson &
14 Johnson talc samples?

15 A. By transmission electron microscopy.

16 Q. Using the heavy liquid separation prep method?

17 A. Yes.

18 Q. What about the samples where amphibole asbestos
19 was not detected; can you assure us there is no
20 asbestos in the containers or what do the results tell
21 us?

22 A. The results say nondetect. We can't say it is
23 there. We can't say it is not there. If it happens
24 to be there, it would be below our analytical
25 sensitivity.

1 Q. Which is what?

2 A. The approximately 8 to 9,000 fibers/bundles per
3 gram asbestos structures per gram of talc.

4 Q. Did MAS conduct an analysis using
5 generally-accepted methodologies to calculate the
6 structures, the number of structures of asbestos
7 contained per gram of the Johnson & Johnson's talc in
8 which it found asbestos?

9 A. Yes.

10 Q. Is this an example where MAS found seven
11 structures of asbestos, looked at the amount that was
12 analyzed, and is this a standard calculation where you
13 then state what it is per gram?

14 A. Per gram per cubic centimeter of air, per
15 centimeter squared of surface area, per the number of
16 fibers or bundles in a lung burden analysis. It is
17 all the same type of math. They all do the same.

18 Q. Let's talk about the polarized light microscopy
19 analysis that MAS did. This is the smaller microscope
20 we looked at earlier. Correct?

21 A. Correct.

22 Q. It talks about MAS using a 1.605 refractive
23 index fluid. Is that what ISO says to use?

24 A. For suspected tremolite or anthophyllite.

25 Q. If we look at an example, this 1978 Johnson's

1 Baby Powder sample, do we see here an MAS data sheet
2 next to the ISO standard?

3 A. Correct.

4 Q. Did MAS look at the morphology and all the other
5 characteristics signs of elongation, extinction
6 characteristics; did they follow ISO in determining
7 whether there was amphibole asbestos in Johnson &
8 Johnson's talc?

9 A. Yes.

10 Q. Is that shown by comparing the ISO standard to
11 MAS' data sheets?

12 A. We followed how you identify it in polarized
13 light microscopy as stated by ISO.

14 Q. In terms of how you determine under polarized
15 light microscopy, whether what you are seeing is
16 asbestos, does ISO give guidelines on that?

17 A. Yes, sir.

18 Q. And if you could, just explain how you can state
19 reliably to this Court based upon generally-accepted
20 methods that the amphibole asbestos that you found in
21 Johnson & Johnson's talc by polarized light microscopy
22 is asbestos?

23 A. We identified it using the criteria on ISO for
24 the crystalline structure and how you identify it.
25 Then we go to, is it asbestos? Does it meet the

1 counting rules? In this case the individual fibers in
2 the bundles have to be in the range of 20-to-1 or
3 greater.

4 In the TEM method, the bundles are measured --
5 you don't try to measure the individual fibers. You
6 can't. It is not allowed in the method because nobody
7 can agree on it. Here you can see the individual
8 fibers. You don't have to count them, but you give a
9 length-to-width aspect ratio.

10 Then it says any of the following parallel
11 fibers occurring in bundles. These are bundles that
12 we are seeing, and you can see in the example we will
13 have parallel fibers.

14 So it meets the criteria for asbestos in the
15 ISO method.

16 Q. I just want to make clear. The notion of
17 looking at whether it is a bundle is something that's
18 part of the PLM analysis. Is that correct?

19 A. Yes.

20 Q. Does the PLM analysis also say it can be fibers
21 in the form of thin needles? Does it have to be a
22 bundle?

23 A. No.

24 Q. Looking at the next page, does ISO state that
25 amphibole asbestos is probably present under polarized

1 light microscopy, if any amphibole fibers longer than
2 5 microns with aspect ratios of 20-to-1 or higher are
3 identified?

4 A. Yes, it does.

5 Q. Did you identify by polarized microscopy
6 amphibole asbestos fibers meeting that standard in the
7 Johnson & Johnson talc products that you identified as
8 having asbestos by polarized light microscopy?

9 A. Yes, we did.

10 Q. We don't have much time but we have Exhibits 3 A
11 and 3 J, your Honor.

12 Dr. Longo, the Court has these. Let's go to
13 the last two. I'm first putting up 3 I, and --

14 A. You have to focus it.

15 Q. Dr. Longo, what are we looking at here?

16 A. We're looking at what we call an actinolite
17 tremolite asbestos bundle. This is under dispersion
18 staining, which gives you the ability to, one,
19 determine the refractive indices, which is part of the
20 test, and, two, it allows us to look at the structure.
21 This optical micrograph shows that this structure is
22 54 microns in length which meets the criteria greater
23 than 5 microns.

24 Also, you can see that there are individual
25 fibers inside this bundle; and at the resolution here,

1 you can see the striations and you can see them
2 sticking out at the end. That's 54 micrometers, and
3 this is approximately 5 or so micrometers wide. So
4 just for argument sake, every one of those fibers are
5 a little bit less than 1 micrometer. So we have
6 aspect ratios here all greater than 54-to-1, which
7 gives you greater than 20-to-1. So it meets the
8 definition of asbestos by the ISO. In fact, they will
9 call it asbestiform.

10 Q. Did you provide these representative photographs
11 Exhibits 3 A to 3 J to the Court because they have
12 higher resolution and they allow the visualization of
13 bundles where you can visualize the individual fibers
14 that make up the bundle?

15 A. Yes.

16 Q. Let's go back to the PowerPoint please.

17 Dr. Longo, we're back to the PowerPoint, and
18 we're looking at this example.

19 Are we looking at amphibole asbestos that MAS
20 identified by polarized light microscopy in a Johnson
21 & Johnson talc sample that meets the
22 generally-accepted standards of what is asbestos under
23 that method?

24 A. Yes. This is anthophyllite. It met all the
25 criteria for the crystalline structure. This

1 particular one is 163 micrometers long. There is
2 individual fibers inside that bundle.

3 Q. That is one of the high resolution pictures you
4 provided to the Court?

5 A. Yes.

6 Q. Just going through.

7 This one says "elongation." Something that's
8 talked about in the ISO standard. In a few words, how
9 does this depict elongation?

10 A. This shows that it is blue in the northeast/
11 southwest orientation. So this would be elongation in
12 the fast direction.

13 Q. I think we saw the term "cross polars" in the
14 ISO generally-accepted method. Is that something we
15 see in polarized light microscopy generally-accepted
16 methods?

17 A. Yes.

18 Q. How does this picture go to the issue of cross
19 polars in identifying anthophyllite asbestos in
20 Johnson & Johnson's Baby Powder under PLM?

21 A. I can tell from the color because of the cross
22 polars. What cross polars does is to look for the
23 extinction angle. The extinction angle is when the
24 asbestos structure disappears at a certain angle. We
25 don't show that because it would be a black screen.

1 This is not the extinction angle.

2 For anthophyllite, if you put it perpendicular
3 or parallel, it would be extinction where no light
4 goes through.

5 Here is elongation again. So we are following
6 all that.

7 THE COURT: Let's sum up.

8 MR. BLOCK: Your Honor. Can I have a
9 two-minute extension?

10 THE COURT: Two minutes.

11 BY MR. BLOCK:

12 Q. Now, we are looking at another example of MAS
13 finding anthophyllite asbestos by polarized light
14 microscopy in Johnson & Johnson's talc products. See
15 that?

16 A. Yes.

17 Q. We just looked at this picture up on the screen.
18 Can you clearly visualize -- is that what an asbestos
19 bundle looks like under polarized light microscopy?

20 A. In these types of samples, yes.

21 Q. Why is that an asbestos bundle under tab 9 G?

22 A. Because it meets all the counting criteria
23 under ISO, the asbestos or asbestiform.

24 Q. Two more slides.

25 The first is looking at the results of the PLM

1 testing MAS did, and if it says 58 percent -- in
2 58 percent of the samples, amphibole asbestos was
3 detected by polarized light microscopy using the heavy
4 liquid separation method. Is that correct?

5 A. Yes.

6 Q. Did MAS also do polarized light microscopy
7 without the heavy liquid separation method?

8 A. Yes, we have 30 percent. So the heavy liquid
9 separation was more sensitive. It almost doubled the
10 positives.

11 Q. Is that consistent with the fact ISO does not
12 recommend doing polarized light microscopy without
13 doing heavy liquid separation?

14 A. No, they don't say that. They give you the
15 option to do either/or, but they tell you what's the
16 most sensitive.

17 Q. Finally, Dr. Longo, have you reviewed historical
18 documents from Johnson & Johnson's production where
19 the types of asbestos, the same types of asbestos you
20 found in Johnson & Johnson's talc products were found
21 in Johnson & Johnson's historical testing of both
22 source talc mines and in the products themselves?

23 MS. BROWN: Objection, your Honor, as to the
24 interpretation of these findings. It has nothing to
25 do with methodology. There are many documents related

1 to industrial talc --

2 THE COURT: I think it is an overbroad
3 question, so I think we are done unless you want to
4 rephrase it.

5 MR. BLOCK: May I?

6 THE COURT: Let me hear.

7 BY MR. BLOCK:

8 Q. Is it relevant and important to you as a
9 scientist to see if the results of your testing are
10 consistent with the historical testing done by Johnson
11 & Johnson and its consultants on its talc sources and
12 on its products?

13 MS. BROWN: The same objection, your Honor.
14 It remains just as broad. All of the testing ever
15 done number one he hasn't reviewed it; number two,
16 many there relates to products that are not at-issue
17 here.

18 THE COURT: I'm going to strike it.

19 Do you have anything else?

20 MR. BLOCK: I'll just narrow it down by
21 saying:

22 BY MR. BLOCK:

23 Q. Did you review the expert reports of Dr.
24 Krekeler and Dr. Cook issued in this case?

25 A. Yes, I did.

1 Q. What significance is there in terms of the
2 opinions they have expressed in this case to you in
3 evaluating the reliability of your testing?

4 A. They identified the same type of asbestos that
5 we are seeing in the Italy mine, the Vermont mine, and
6 compared that also to Johnson & Johnson's own test for
7 those particular mines for cosmetic talc. We are
8 consistent with they say that is in there because of
9 the geological formation as well as the literature as
10 well as the testing done by Johnson & Johnson.

11 MR. BLOCK: Thank you, your Honor, for giving
12 me a little extra time. I appreciate that.

13 THE COURT: We're going to break for lunch
14 now. It is a convenient time. Let's be back at a
15 quarter of 1:00, please.

16 THE DEPUTY CLERK: All rise.

17 (The luncheon recess is taken.)

18 (Continued on the next page.)

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A F T E R N O O N S E S S I O N

THE DEPUTY CLERK: All rise.

THE COURT: Thank you.

WILLIAM E. LONGO, resumes.

CROSS-EXAMINATION

BY MS. BROWN:

Q. Good afternoon, Dr. Longo.

A. Good afternoon.

Q. Dr. Longo, you have never personally tested a talc sample for asbestos from start to finish. Correct?

A. That's correct.

Q. And when it comes to the samples that you talked to us about this morning with counsel, you were not actually the person who looked under the microscope and ran those samples. Right, sir?

A. That is correct.

Q. What that means is you are also not the person who did the heavy density liquid preparation to get those samples ready to be looked at under at the microscope. Correct?

A. That is true.

1 Q. What that also means is you are not the person
2 who filled out some of the count sheets we saw up here
3 this morning. Correct?

4 A. That is correct.

5 Q. What that means is you are not the person who
6 made the call when we were looking under the
7 microscope about whether what they were seeing was a
8 bundle or a fiber. Right, Doctor?

9 A. That's correct.

10 Q. All of that work -- the sample preparation, the
11 looking under the microscope, the filling out of the
12 count sheets, the making the call of a bundle or fiber
13 -- all of that work was done by people who work for
14 you at the company you own. Is that right?

15 A. Yes, ma'am.

16 Q. And those individuals have never provided sworn
17 testimony under oath about the tests they conducted
18 here in the MDL. Correct?

19 A. I believe that's correct.

20 Q. And those folks are not coming into this court
21 to talk to us about their work looking at samples
22 under the microscope. Correct?

23 A. That is correct.

24 Q. You are here to talk about the findings of the
25 people that work for you at MAS. Correct?

1 A. That's correct.

2 Q. The truth is, Dr. Longo, that nowadays very
3 little to none of your time is actually spent at the
4 microscope testing products for the presence of
5 asbestos. Correct?

6 A. I don't do that too often.

7 Q. Nowadays, very little to none of your time is
8 spent doing that. Right?

9 A. As I said, I don't do that too often anymore.

10 Q. In fact, most of what you do these days is
11 testify in court. Correct?

12 A. No, ma'am. I also run the company. I also give
13 directions on what protocols to use. I'm in meetings
14 hiring and firing; and where the direction of the
15 science is going, what methods we are going to use for
16 different types of applications. So, yes, I testify
17 once to twice a week. I still have other jobs.

18 Q. When you say once or twice a week, Dr. Longo,
19 the truth of the matter is you have testified at least
20 once a week every week for the past five years. Fair?

21 A. That is fair.

22 Q. And since the time you opened your company MAS
23 in 1988, you have given about 2,000 to 3,000
24 depositions. Correct, sir?

25 A. I think that is correct.

1 Q. What you testified to before, Doctor, is that
2 working as an expert witness has actually been what
3 has allowed your lab to survive?

4 A. Yes. That and every other big client we have.
5 That's true.

6 Q. You told us this morning that the \$30 million
7 that MAS received from plaintiffs' lawyers didn't go
8 to you; it went to the company. Correct?

9 A. That's correct.

10 Q. And you, sir, own 75 percent of MAS. Correct?

11 A. That's correct.

12 Q. And you have declined to testify about how much
13 money you make at MAS. Correct?

14 A. That's true.

15 Q. And you have been testifying to that \$30 million
16 figure for a couple of years now. Right, Doctor?

17 A. I think it has been a year.

18 Q. What you testified to, Doctor, is that you think
19 that every plaintiff's attorney in the country lists
20 you as an expert in any type of asbestos litigation.
21 Isn't that right?

22 A. They did that at one time, yes, ma'am.

23 Q. Your testimony is they do that without even
24 asking you if it is okay. Right?

25 A. They did that for a while, yes.

1 Q. You testified in fact that -- you testify so
2 much as an expert witness that it is a juggling act to
3 try to make time for trials like this one and others.
4 Correct?

5 A. Yes, ma'am.

6 Q. You were in Kentucky yesterday testifying at a
7 trial there. Correct?

8 A. That is correct.

9 Q. And this morning you talked to us a little bit
10 -- counsel had a slide up there about corporations,
11 and you talked a little bit about work that you have
12 done for GE. Do you remember that?

13 A. Yes.

14 Q. The truth of the matter is that 95 percent of
15 the time you are in court, you are testifying for
16 plaintiffs' lawyers. Right?

17 A. That is correct.

18 Q. And the fact of the matter is, Dr. Longo, is
19 that your lab MAS has never tested cosmetic talc when
20 you weren't being paid to do it by lawyers for the
21 plaintiffs in litigation. Right?

22 A. That is correct.

23 Q. And you talked a lot about methodology this
24 morning with counsel. But the truth is that you don't
25 know anyone, Dr. Longo, who is not being paid as an

1 expert witness for the plaintiffs who is using the
2 methods that you used in this case to test cosmetic
3 talc. Isn't that right?

4 A. I think some part of it is right. The heavy
5 liquid density method portion. But the other standard
6 methodology where for morphology, EDXA and SAED is a
7 standard method that even when people aren't using
8 heavy liquid density separation, they are using those
9 three steps to identify regulated asbestos.

10 Q. True or not true, Dr. Longo: You don't know of
11 anyone else besides Mr. Lee Poye, expert for the
12 plaintiffs, and yourself, using the method you are
13 using in this case, to test cosmetic talc for
14 asbestos?

15 A. Again, part of that is correct. It's the heavy
16 liquid density portion. But anyone who has analyzed
17 cosmetic talc using the standard methodology for the
18 identification of asbestos would be doing the same
19 thing.

20 MS. BROWN: Permission to read, your Honor?

21 THE COURT: Yes.

22 MS. BROWN: This would be in the Court's and
23 counsel's testimony binder at tab Longo 560 from the
24 December 4, 2018, Blinkinshop deposition, page 93,
25 line 18, to 94, 2:

1 "QUESTION: Okay. But back to my original
2 statement. You and Lee Poye are the only people that
3 you know of in the world using the method you are
4 using in this case?

5 "ANSWER: I don't know in the world. I know
6 unless somebody -- somebody else may be using it. But
7 for me to say who else out there is using it, if you
8 want to know this, I don't know anybody else besides
9 Lee and I, since we're the ones that seem to be
10 testifying about it."

11 Dr. Longo, the only protocol recognized by the
12 FDA for the analysis of talc is the USP Monograph For
13 Talc. Correct?

14 A. At this time I think that is correct versus the
15 committee that are trying to upgrade it to be more
16 sensitive because of the problems with it, but I
17 believe you are right.

18 Q. The answer to my question is yes?

19 A. Yes. But not --

20 THE COURT: I understand your answer, but I
21 think you have answered her question.

22 Q. And you, Dr. Longo, did not use the USP
23 Monograph for Talc in evaluating the MDL samples.
24 Correct?

25 A. No, ma'am, we didn't.

1 Q. No government regulatory agency has adopted the
2 ISO method you use here. Correct?

3 A. That is correct.

4 Q. Before you were hired as an expert witness in
5 litigation, your lab had never used the ISO 22262
6 method for the analysis of asbestos in any product
7 whatsoever. Correct?

8 A. That is correct.

9 Q. No government regulatory agency has adopted the
10 Blount method you used here. Correct?

11 A. That is correct.

12 Q. Before you were hired by the lawyers for
13 plaintiffs in litigation, you had never even heard of
14 the Blount method. Correct?

15 A. That is correct.

16 Q. And you spoke a little bit this morning about
17 that Blount method. The truth of the matter is,
18 Dr. Longo, the Blount method cannot detect chrysotile.
19 Correct?

20 A. No, ma'am, no heavy liquid density method that's
21 being used now in the ISO method for talc can detect
22 chrysotile.

23 Q. Counsel had up on the screen six minerals that
24 are asbestos, and chrysotile is one of them. Right?

25 A. That is a regulated asbestos, yes.

1 Q. This Blount method at this time can't pick up
2 that type. Right?

3 A. Not at that heavy density liquid separation, no.

4 Q. That's part of the method. Right?

5 A. Correct.

6 Q. This Blount method also can't pick up
7 anthophyllite if it doesn't have a lot of iron.
8 Right?

9 A. That is correct.

10 Q. So two of the six types of asbestos the Blount
11 method cannot detect?

12 A. No, that's a little bit different. It can't
13 detect chrysotile but it is detecting anthophyllite.
14 It seems, though, most of the anthophyllite we're
15 looking at has heavy iron. So it definitely finds
16 anthophyllite, but only anthophyllite that has iron.

17 Q. Dr. Longo, in addition to not being able to find
18 chrysotile, your heavy liquid density separation
19 method can also miss anthophyllite if it is not the
20 heavy iron anthophyllite. Correct?

21 A. I agree with that.

22 Q. And as a result you know no regulatory agency
23 has ever adopted the Blount method. Correct?

24 A. I believe that's correct.

25 Q. And so if we can go to slide 33, the three

1 methods you used, Dr. Longo, in testing the MDL
2 samples were ISO TEM. Correct?

3 A. Yes and no. Certainly, for the methodology for
4 the morphology, but it was more based on the EPA
5 AHERA.

6 Q. You used the ISO TEM protocol to test and you
7 used different counting rules. Correct?

8 A. We used the ISO protocol, the ISO 22262-1 and
9 22262-2 for the ISO analysis, but the other standard
10 methods for the methodology. That's true.

11 Q. We're going to talk about the -- you used ISO
12 both for the regular old PLM testing. Right?

13 A. Yes.

14 Q. And you used ISO for the heavy density
15 concentration TEM testing. Right?

16 A. Correct.

17 Q. And you used Blount plus PLM. Correct?

18 A. Correct.

19 Q. And those are the methods you used for these
20 samples. Correct?

21 A. Correct.

22 Q. And before the MDL, you had issued a report a
23 couple of years ago. Correct?

24 A. Yes.

25 Q. And we're not going to talk a lot about that

1 report. By and large, what you tested there were
2 samples that the plaintiffs' lawyers had purchased off
3 of eBay. Right?

4 A. I would say 60, 70 percent. The other samples
5 came from actual plaintiffs who had saved their
6 containers of Johnson & Johnson Shower To Shower.

7 Q. And you spent about two years in courts around
8 the country talking about that testing from that
9 original report. Correct?

10 A. Until this one came out, yes.

11 Q. But the method you used in that original report
12 is different than the method you used for the MDL
13 samples. Correct?

14 A. Correct.

15 Q. You used for the original eBay report something
16 you called "modified Blount plus TEM." Correct?

17 A. Yes, but the modified Blount for the sample
18 preparation which had some slight changes in the heavy
19 density liquid and then the regulated standard methods
20 for identifying the asbestos was the same.

21 Q. And none of these methods have been adopted by a
22 government regulatory agency. Right?

23 A. I'm sorry.

24 MR. BLOCK: Assumes facts not in evidence as
25 to whether there is a government adopted test for

1 talc. Objection. Assumes facts not in evidence.

2 MS. BROWN: I can rephrase, your Honor.

3 THE COURT: Okay.

4 BY MS. BROWN:

5 Q. No government has approved any one of these
6 methods for testing cosmetic talc for asbestos.

7 Right?

8 A. I'm not aware of the FDA having this method.
9 The Environmental Protection Agency has gravimetric
10 methods for testing for asbestos, not heavy liquid
11 density, but concentrations methods by TEM, and, of
12 course, the morphology rules and identification have
13 been adopted by federal agencies because of the TEM
14 analysis. It is really working around just the sample
15 preparation.

16 Q. I want to be real specific with my question so I
17 make sure you understand.

18 No government regulatory agency has adopted
19 either ISO 22262 or the Blount method. Correct?

20 A. That's correct.

21 Q. And you were not using any of these methods
22 prior to being hired as an expert witness in
23 litigation. Correct?

24 A. Not the sample preparation portions, no.

25 Q. Dr. Longo, you mentioned this morning --

1 MS. BROWN: If I could have the ELMO, please.

2 Q. Dr. Longo, counsel had this slide up earlier
3 today talking about your credentials. Do you remember
4 that?

5 A. I do.

6 Q. And you had some questions about some of this
7 CDC, NASA, state, municipality work. Do you remember
8 that?

9 A. Yes.

10 Q. The truth, though, Dr. Longo, is that none of
11 that work had anything to do with cosmetic talc.
12 Correct?

13 A. That is correct.

14 Q. And you have never published any papers relating
15 to talc. Correct?

16 A. That is correct.

17 Q. And none of your opinions regarding the work
18 that you have done in this case have been submitted
19 for peer review publication in the scientific
20 literature. Correct?

21 A. That is correct.

22 Q. No government agency has asked you to test
23 talcum powder. True?

24 A. That is true.

25 Q. Now, you mentioned this morning, referring to

1 this slide, that your shop has an FDA lab number. Do
2 you remember that?

3 A. Yes.

4 Q. The FDA, though, has tested cosmetic talc for
5 asbestos. Correct?

6 A. Yes, sent out to a contract lab.

7 Q. And you were not asked to test cosmetic talc for
8 the FDA. Correct?

9 A. No, we didn't bid on the project.

10 Q. And the company that did the testing for the FDA
11 did not use a heavy density liquid separation
12 preparation?

13 A. No, they didn't, and that's one of the problems
14 with their testing.

15 Q. And you had a document up here referencing the
16 FDA's testing on a Claire's eye shadow product. Do
17 you remember that?

18 A. Yes.

19 Q. That's testing the FDA has done as recently as a
20 few months ago. Correct?

21 A. Correct.

22 Q. And you know that in connection with that
23 testing, the FDA commented on the testing that it had
24 done on cosmetic talc back in 2009 and 2010. Correct?

25 A. Correct.

1 Q. And you know the FDA referred to the testing it
2 did in 2009 and 2010 as using the most sensitive
3 techniques available; don't you, Dr. Longo?

4 A. They stated that but it is wrong.

5 Q. The truth of the matter is, Dr. Longo, that
6 people have been testing cosmetic talc for the
7 presence of asbestos for decades. Correct?

8 A. That is correct.

9 Q. And since you were hired as an expert witness in
10 litigation on behalf of the plaintiffs' lawyers, you
11 had been asked repeatedly in courtrooms around the
12 country when it was that you first started testing
13 cosmetic talc. Right?

14 A. That's correct.

15 Q. And as recently as April of this year in court
16 in front of a jury you testified for the first time --
17 you testified that the first time you started testing
18 cosmetic talc was about two to three years ago.
19 Right?

20 A. That's correct.

21 Q. And the fact of the matter is, is that we now
22 know that that is not true. Right?

23 A. Well, the testimony was true. But it looks like
24 that I had given some testimony some years ago that we
25 had analyzed some cosmetic talc.

1 Q. I want to talk a little bit about that. You
2 have testified on behalf of plaintiffs in hundreds of
3 cases where they are bringing a lawsuit against a
4 company that purposefully added asbestos to a product.
5 Correct?

6 A. Correct.

7 Q. And you have given in connection with that
8 expert witness work, Dr. Longo; you have given
9 hundreds if not thousands of depositions and trial
10 testimony. Correct?

11 A. That is correct.

12 Q. And one of the things you found that you were
13 often asked probably by defense lawyers in those
14 situations was about potential alternative exposures
15 that the plaintiffs may have had to asbestos. Right?

16 A. That is correct.

17 Q. So back in 2002 and 2003, when you were
18 testifying on behalf of plaintiffs' lawyers suing
19 other companies that potentially put asbestos in their
20 product, you testified about cosmetic talc. Right?

21 A. It looks like on two occasions.

22 Q. And what you testified -- this was in the
23 context of defense lawyers asking you questions if a
24 plaintiff could have been exposed to asbestos from
25 cosmetic talc. Right?

1 A. It looks that way, yes.

2 Q. And what you swore under oath back then was that
3 you and your lab MAS had done studies on the asbestos
4 content of talc. Right?

5 A. Yes.

6 Q. What you testified to is those studies had
7 included studying finished cosmetic talc products.
8 Right?

9 A. I think it was just cosmetic talc.

10 Q. Talc that was used in cosmetics. Correct?

11 A. Yes, ma'am.

12 Q. You remember that testimony?

13 A. Well, I still don't remember the testimony.
14 I've been shown it.

15 Q. And what you said back then, Dr. Longo, when you
16 were testifying against companies that made products
17 like brakes and gaskets that had asbestos in it, you
18 swore under oath that you had never found any asbestos
19 minerals in any talc used for cosmetic purposes.
20 Right?

21 A. That's what I have been shown, yes.

22 Q. And in fact, Dr. Longo, you were specifically
23 asked whether talc that was used on babies had
24 asbestos. Right?

25 A. Yes, that's the one question.

1 Q. And you said you had looked into it, that your
2 lab MAS had studied it, that you had looked into talc
3 that was used on babies, and you had not found any
4 asbestos. Right?

5 A. That's what I stated.

6 Q. And, in fact, what you said is that you had
7 looked for tremolite and anthophyllite, the two types
8 of asbestos we saw up on the screen today. Right?

9 A. I don't recall any of it. If that's what it
10 states, that's what I stated those years ago.

11 MS. BROWN: Permission to read, your Honor.

12 Could we have in the testimony binder Longo
13 561, which is a deposition Manbodh from May 28, 2002,
14 at page 106, lines 11 to 19:

15 "QUESTION: What other exposures, household
16 contacts would people have other than those that
17 you've mentioned?

18 "ANSWER: Usually, that's it.

19 "QUESTION: Talcum powder that was used on
20 babies, did some of that contain asbestos?

21 "ANSWER: We've looked. We have not found it.

22 "QUESTION: You are not aware of any?

23 "ANSWER: I'm not aware of us ever proving
24 that talcum powder had tremolite or anthophyllite."

25 That was your testimony, correct, Dr. Longo?

1 A. That's what it states, yes.

2 Q. And the truth of the matter is, Dr. Longo, back
3 in 2002 you said that the claims that cosmetic talc
4 could have asbestos were an urban legend in your
5 field. Isn't that right?

6 A. That's what the testimony says.

7 Q. And you know what an urban legend is, don't you,
8 Dr. Longo?

9 A. Yes, I do.

10 Q. And the first time I asked you that, you told me
11 an urban legend was somebody who is in an urban
12 environment has a legend. Do you remember that?

13 A. I do. I was kind of shocked what is this.

14 Q. You know now what an urban legend is. Right?

15 A. Yes, ma'am. We discussed it at that trial, and
16 I agree with you.

17 Q. It is a myth; isn't it?

18 A. Yes, it is.

19 Q. A fictional story someone is trying to portray
20 as true. Correct?

21 A. That's what an urban legend would mean in that
22 context.

23 Q. I want to talk a little bit, Dr. Longo, about
24 the nature of your findings here and the nature of
25 your opinions.

1 So to be clear, you are not giving any
2 opinions here about health effects. Correct?

3 A. That is correct.

4 Q. You are not testifying about any alleged health
5 effects from fibrous talc. Correct?

6 A. That's correct.

7 Q. Or cleavage fragments or what you have
8 identified as regulated asbestos, none of that.
9 Right?

10 A. That is correct.

11 Q. And let's talk a little bit about the percentage
12 of asbestos that the folks working at your shop have
13 claimed to find here. If we could look at the
14 overview slide of the findings.

15 The amount of asbestos that your analysts
16 claim to have found in Johnson & Johnson products is
17 well below 1 percent. Correct?

18 A. That is correct.

19 Q. And so here are your MDL findings, and they
20 range in number. For example, we highlighted here the
21 highest concentration that your folks claim to have
22 found in a 1991 bottle is .0092 percent. Do you see
23 that?

24 A. I do.

25 Q. That is 9.2 thousandths of a percent. Right?

1 A. That is correct.

2 Q. And the lowest concentration, in fact, that your
3 folks claim to have found in a finished product is
4 .000033 percent. Right?

5 A. Correct.

6 Q. If we could go to the next slide with those two.
7 And that's 3.3 millionths of a percent. Correct?

8 A. Yes.

9 Q. And you, Dr. Longo, yourself have described
10 levels like that as ultra trace?

11 A. Correct.

12 Q. And in many of the MDL samples your analysts
13 didn't detect any asbestos at all. Correct?

14 A. Let's see. There was 31 percent non-detect.

15 Q. So there were bottles from Vermont where your
16 analysts detected no asbestos. Correct?

17 A. Correct. Bottles from Italy that were at
18 non-detect.

19 Q. And what you state in your report, Doctor, is
20 that you were of the opinion that individuals who used
21 Johnson & Johnson talcum powder products in the past
22 would have more likely than not been exposed to
23 significant airborne levels of both regulated
24 amphibole asbestos and fibrous asbestiform talc.
25 Right?

1 A. That's correct.

2 Q. So it is your opinion that individuals who used
3 this product have a significant exposure. Correct?

4 A. Yes.

5 Q. But you haven't done in this MDL an exposure
6 analysis. Correct?

7 A. Not with these samples, no.

8 Q. Meaning you have not calculated, Dr. Longo,
9 whether or not it is even possible for those ultra,
10 ultra trace levels that we just looked at to make it
11 out of a bottle and into a human being who is using
12 that product as a consumer. Correct?

13 A. We haven't done that study. If it is in the
14 bottle, and even though those, quote, ultra, trace
15 concentrations are still very significant, it is going
16 to get out of the bottle, will get up in the air, and
17 be in the breathing zone.

18 THE COURT: How do you use the term
19 "significance"?

20 THE WITNESS: I term it as, can we measure it?
21 So it is 10 to 20 times above background. In this
22 case, there is very little to no background involving
23 tremolite and anthophyllite. It is not on a health
24 basis. It is, is there an exposure?

25 MS. BROWN: May I follow up on that, your

1 Honor?

2 THE COURT: Yes.

3 BY MS. BROWN:

4 Q. You just said 10 to 20 times above background.
5 The fact of the matter here, as it relates to the MDL
6 samples, you haven't measured or calculated anything
7 at all?

8 A. Not with the MDL samples.

9 Q. And it is not that your facility at MAS doesn't
10 know how to do an exposure simulation, Right?

11 A. Right. We have done those, not with the MDL
12 samples.

13 THE COURT: What was your opinion based on; it
14 was significant in the MDL?

15 THE WITNESS: That it is significant in that
16 they would have had an exposure that more than half of
17 the samples that we measured were positive for
18 asbestos. We have done exposure calculations in the
19 past with Johnson & Johnson in which we have
20 calculated these exposures with Johnson & Johnson
21 products and made a measurement.

22 THE COURT: How about these samples that you
23 were given?

24 THE WITNESS: No, ma'am.

25 THE COURT: You may proceed.

1 BY MS. BROWN:

2 Q. In fact, though, Dr. Longo, even though you have
3 done no study to quantify whether or not an individual
4 using any of the samples in the MDL would have any
5 exposure, you do know that by using any of the samples
6 in the MDL, an individual would not have an exposure
7 greater than OSHA's permissible exposure limit for an
8 eight-hour average. Correct?

9 A. That is correct.

10 Q. And just to orient us on that, OSHA regulates
11 the amount of asbestos that workers can be exposed to
12 in something called a Permissible Exposure Limit. You
13 are familiar with that. Right?

14 A. Yes, I'm familiar for an industrial site and a
15 working site. OSHA doesn't regulate in residential
16 homes especially infants and children that would have
17 the potential to be exposed at some point.

18 Q. And the OSHA PEL limit is .1 fibers per c.c.,
19 right?

20 A. Yes.

21 Q. And you know that they haven't done a specific
22 calculation, any consumer exposure for an eight-hour
23 time-weighted average would be less than the OSHA PEL.
24 Correct?

25 A. That is correct.

1 Q. And you have no reason, Dr. Longo, because you
2 haven't done the calculation, to dispute the findings
3 of defense expert Dr. Nadia Moore as it relates to
4 exposure levels. Correct?

5 A. I haven't seen that report.

6 Q. Well, the asbestos briefing was listed as a
7 supplemental item that you reviewed and relied on.
8 Did that make it to you?

9 A. It made it to me but I haven't reviewed the
10 whole report, no.

11 Q. Fair enough. Dr. Moore's report, for the Court,
12 at page 43, indicates, for example, that the annual
13 average exposure to asbestos fibers from ambient air
14 is more than three times higher than the alleged
15 exposure from talc.

16 You, for example, have not done any study to
17 dispute that?

18 A. I haven't done the study, but you can't have an
19 ambient level and then have an additional exposure and
20 not add to that. That doesn't make a lot of sense to
21 me. I have seen that in the past many times. If you
22 say there is an ambient level, any additional exposure
23 is adding to that ambient level. You can't have an
24 exposure lower than the ambient level if you are
25 saying there is asbestos there.

1 Q. And you have not done any calculations as it
2 relates to the MDL samples on how, if at all, if a
3 consumer's exposure would relate to any other exposure
4 limits. Correct?

5 A. In dealing with the MDL samples only, you are
6 correct.

7 Q. What you have done, though, Doctor, in the past
8 is testified about whether a person could be exposed
9 to asbestos from a product that only contained a trace
10 level of asbestos. Right?

11 A. That is correct.

12 Q. And you and I talked about that some a couple of
13 months ago in front of a jury in South Carolina.
14 Right?

15 A. Yes, ma'am.

16 Q. And what you testified to was that something
17 called thin set cement, is a very dusty product.
18 Right?

19 A. During the mixing, that's correct.

20 Q. Because what happens with this product is that
21 if you got to take the cement and add water to it and
22 mix it up. Right?

23 A. Yes.

24 Q. And during the process of doing that, the person
25 doing the mixing, and everybody else around them,

1 could inhale a number of fibers. Right?

2 A. That's correct.

3 Q. And you have given testimony in the past in a
4 case involving thin set cement, that contained
5 1 percent asbestos. Right?

6 A. Yes. I thought it was trace.

7 Q. Well, 1 percent is trace and less than
8 1 percent, Dr. Longo, less than .1 percent, according
9 to you, is ultra trace. Right?

10 A. Well, the term for ultra trace is five zeros.
11 For me, trace is below 1 percent.

12 Q. And so you testified in a case regarding the
13 thin set cement product that contained less than
14 1 percent asbestos. Right?

15 A. That's correct.

16 Q. And the question that was posed to you was
17 whether a person who was mixing up that cement 20
18 times a day for 40 years would have a significant
19 exposure to asbestos. Right?

20 A. That is correct.

21 Q. And your testimony under oath in that case was
22 that because the product only contained 1 percent
23 asbestos --

24 A. I thought there was less than 1 percent, trace
25 amounts.

1 Q. Less than 1 percent, the individual would not
2 have a significant exposure. Right?

3 A. I think I said it a little differently. If you
4 don't mind, we can read it.

5 Q. Sure.

6 MS. BROWN: Your Honor.

7 Q. We're looking at your testimony, Longo 555. It
8 is a deposition you gave April 29, 1997, Sorise
9 deposition.

10 A. What was the number?

11 Q. Longo 555, page 159, lines 10 to 23, and you
12 were asked this question:

13 "QUESTION: Let me ask you to assume that
14 someone for a period of around 40 years, that that
15 person either mixed thin set cement between 1 and 20
16 times a day, and they did this for 40 years. Do you
17 have an opinion at all regarding the nature or extent
18 of that exposure to asbestos?"

19 There was an objection. Your answer?

20 "ANSWER: Since it is thin set cement that has
21 only trace levels of asbestos chrysotile in it, I
22 don't believe that would be very large exposure at
23 all."

24 That was your testimony. Correct?

25 A. Yes.

1 Q. Dr. Longo, I want to talk a little bit about
2 what is and what is not asbestos.

3 And if we could look at slide 1, please.

4 Dr. Longo, you have seen this or a similar
5 slide before. Correct?

6 A. I have.

7 Q. To start, we can agree that not all amphiboles
8 is asbestos?

9 A. Yes.

10 Q. Amphibole minerals occur in both the asbestiform
11 and non-asbestiform habits. Correct?

12 A. That's correct.

13 Q. And so, for example, there are two kinds of
14 tremolite: one that is asbestos and one that is not.
15 Correct?

16 A. No. You can argue over the asbestiform. If it
17 meets the standard methodology that we use to identify
18 asbestos, it is regulated asbestos.

19 MS. BROWN: Permission to read, your Honor?

20 THE COURT: Yes.

21 Q. Longo 521, October 25th, 2017, Herford trial
22 testimony at page 1377 lines 2 through 5:

23 Again, this is the October 25th, 2007, Herford
24 trial testimony at page 1377, lines 2 to 5:

25 MS. BROWN: We'll go back to that.

1 THE COURT: You can just read it.

2 MS. BROWN: It is going up now.

3 Q. You were asked, Dr. Longo, during this Herford
4 trial:

5 "QUESTION: Okay. Now, you will agree there
6 are two kinds of tremolite: one that is asbestos and
7 one that isn't. Right?

8 "ANSWER: I would agree."

9 Correct?

10 A. That's correct. If that's the question you
11 asked me, I apologize. I misunderstood.

12 Q. The word tremolite, Dr. Longo, does not
13 automatically mean asbestos. Correct?

14 A. That's correct.

15 Q. A cleavage fragment is not asbestos. Correct?

16 A. That is correct, if it is a true cleavage
17 fragment it is not asbestos.

18 Q. A cleavage fragment is a crushed up piece of
19 non-asbestiform rock. Correct?

20 A. That is correct.

21 Q. Now, I want to talk, Dr. Longo, you had some
22 slides this morning relating to the same topic that
23 I'm talking about here, what is and what is not
24 asbestos, and I want to ask you some questions about
25 those, if I could just switch over to the ELMO.

1 This was one of the slides that counsel showed
2 you this morning. Do you recall talking about this
3 slide?

4 A. Yes.

5 Q. And you had some questions and answers regarding
6 what an asbestiform mineral is from the McCrone
7 Particle Atlas. Correct?

8 A. Yes.

9 Q. And the very next slide you were shown was this
10 one from the EPA AHERA regulation. Do you see that?

11 A. I do.

12 Q. And this is AHERA's definition of a fiber.
13 Correct?

14 A. That is correct.

15 Q. But you know, of course, that AHERA, the
16 regulation, defines asbestos. Right?

17 A. Correct.

18 Q. And you didn't put that definition above. So I
19 want to show it, if we could go to slide No. 4,
20 please.

21 AHERA defines asbestos as the asbestiform
22 varieties of chrysotile, crocidolite, amosite,
23 anthophyllite tremolite and actinolite. Correct?

24 A. That's correct.

25 Q. And AHERA also defines asbestiform?

1 A. Correct.

2 Q. And AHERA makes a distinction between
3 asbestiform and non-asbestiform minerals. Correct?

4 A. That's what AHERA states. That's not true;
5 that's a general definition for asbestos-added
6 products.

7 Q. Let's look at the AHERA table at Longo 516 AHERA
8 at page 80, please.

9 You know, Dr. Longo, that in fact all of the
10 regulatory authorities including those on which you
11 rely in this case have a definition of asbestos.
12 Right?

13 A. Asbestiform.

14 Q. Well, we're going to look at the definition of
15 asbestos. But let's talk quickly about AHERA's table
16 here, the asbestos minerals and their non-asbestiform
17 analogs. Do you see that?

18 A. I do.

19 Q. And AHERA makes the distinction between
20 asbestiform minerals and non-asbestos minerals.
21 Correct?

22 A. That is correct.

23 Q. And just going backwards in the outline here,
24 OSHA is another health-based organization you are
25 familiar with. Right, Doctor?

1 A. I am.

2 Q. And you know OSHA also defines asbestos.

3 Correct?

4 A. It does.

5 Q. And what OSHA defines asbestos as is including
6 chrysotile, amosite, crocidolite, tremolite asbestos,
7 anthophyllite asbestos and actinolite asbestos.

8 Correct?

9 A. That is correct.

10 Q. And what OSHA says, if we could go to slide 3,
11 please, is that for purposes of this regulation, the
12 mineral must be one of the six minerals covered and
13 must be in the asbestos growth habit. Correct?

14 A. Correct.

15 Q. And you know, Dr. Longo, that OSHA in particular
16 changed the definition of asbestos in 1992
17 specifically to exclude the non-asbestiform minerals
18 from its definition. Correct?

19 A. That's what they stated.

20 Q. And in addition to OSHA and EPA, you know ISO,
21 the regulation you rely in part in this case, it also
22 has a definition of asbestos; does it not?

23 A. It does.

24 Q. And if we could look at slide 6, we'll look at
25 how OSHA defines asbestos.

1 THE COURT: ISO. You said "OSHA."

2 Q. ISO's definition of amphibole asbestos is
3 "amphibole in an asbestiform habit." Correct?

4 A. Correct.

5 Q. Now, I want to talk a little bit, then,
6 Dr. Longo, about the definition of asbestos that you
7 employed in your report. Okay?

8 A. Using the standard methodology, that is correct.

9 Q. So for purposes of your report, Dr. Longo, you
10 have used a definition of a counting rule. Correct?

11 A. Well, it is the methodology for determining the
12 morphology. So it gives you the dimensions of what
13 asbestos is.

14 Q. And, so, when you state, for example, in your
15 report here, your February 1st, 2019, MDL report, that
16 "amphibole fibers or bundles with substantially
17 parallel sides and an aspect ratio of 5-to-1 or
18 greater and at least .5 microns in length were counted
19 as regulated asbestos fibers and bundles per standard
20 TEM counting rules."

21 Correct?

22 A. Correct.

23 Q. And those were some of the counting rules that
24 you described this morning, correct?

25 A. That is correct.

1 Q. If we could just go back to the ELMO for a
2 second. This was AHERA's definition of a fiber that
3 you pointed to this morning. Correct?

4 A. Correct.

5 Q. And you used the AHERA talcum powder counting
6 rules as part of your report here. Correct?

7 A. For the morphology determination, yes.

8 Q. But, Dr. Longo, when you crush up a
9 non-asbestiform rock, it can shatter into long and
10 thin pieces. Correct?

11 A. Sometimes, yes.

12 Q. And those long, thin cleavage fragments can
13 actually resemble asbestos fibers. Correct?

14 A. That can happen.

15 Q. In fact, what can happen is that
16 non-asbestiform, the non-asbestiform version of these
17 minerals, when it is crushed up, it can generate
18 particles that have a minimum length greater than or
19 equal to .5 microns, an aspect ratio of 5-to-1, and
20 substantially parallel sides. Right?

21 A. There is a slight chance of that but the
22 probability is not too high. But, certainly, it might
23 happen.

24 Q. Well, Dr. Longo, in fact, the ISO standard on
25 which you rely says that, generally, when you crush up

1 the non-asbestiform rock, it is going to cleave in
2 elongated fragments that conform to the counting rules
3 definition of a fiber. Right?

4 A. It does say that, but you have to look at the
5 totality of what you are analyzing here. If you look
6 at the Blount chart, if you look at the Campbell
7 chart, if you look at what happens to talc, tremolite
8 and anthophyllite, the overwhelming majority of these
9 cleavage fragments are less than 3-to-1 aspect ratio
10 as compared to the ones they say are longer, and what
11 they compare to tremolite asbestos. I understand your
12 point. But it is not affecting the analysis of what
13 regulated asbestos is.

14 Q. You said a lot, and we're going to talk about
15 cleavage fragments. You said the overwhelming
16 majority of these fragments are less than 3-to-1. Did
17 I hear you right?

18 A. In the Blount and Campbell articles, yes.

19 Q. You don't know if the overwhelming majority of
20 particles in the the MDL samples are less than 3-to-1.
21 Right?

22 A. Well, we didn't count those. But the
23 overwhelming majority of the particles we did count
24 are not cleavage fragments; they are bundles of
25 fibers.

1 Q. You did not count in your analysis of the MDL
2 samples any particles that were less than an aspect
3 ratio of 3-to-1. Right?

4 A. That is correct, but in previous work where
5 we've looked at tremolite, anthophyllite, the amount
6 of 3-to-1, and adding everything that's there, only
7 moved the needle about one point.

8 Q. Dr. Longo, I don't want to get involved in other
9 testing you have done. I want to talk about what you
10 did in the MDL. And just to close the loop on this,
11 in the MDL you didn't count or record or document or
12 give us any information that would show that you
13 quantified the number of particles that were less than
14 a 3-to-1 aspect ratio. Right, sir?

15 A. Just speaking about the MDL, that is correct.

16 Q. So we could look at slide 11, please. This
17 comes from the ISO definition of cleavage fragment,
18 and this is one of the ISO standards on which you
19 rely, and defined the cleavage fragment as a fragment
20 of a crystal that's bounded by cleavage basis.
21 Correct?

22 A. That's correct.

23 Q. And the note that the ISO standard on which you
24 rely has here is that the crushing of non-asbestiform
25 amphiboles generally yields elongated fragments that

1 conform to the definition of a fiber but rarely have
2 aspect ratios exceeding 30-to-1. Correct?

3 A. That's what it states.

4 Q. Crushing up -- just because you crush up a
5 non-asbestiform rock, it can never magically make that
6 rock a piece of asbestos. Correct?

7 A. If it does not meet the methodology and the
8 counting rules, no, it cannot be counted as asbestos.

9 Q. If you start out with a non-asbestiform rock and
10 you crush it up, even if it crushes into pieces that
11 measure up to your definition of a fiber, there is not
12 some magical transformation that happens that turns
13 those pieces into asbestos. Right?

14 A. No, there is no magic involved here. If it
15 meets the definition, it is a regulated asbestos
16 fiber. But, as I've stated, most of the particles we
17 have counted are bundles which by definition, no
18 matter what the aspect ratio is, are not cleavage
19 fragments.

20 Q. I have questions about the bundles.

21 But to clear this out, Dr. Longo, you can't
22 take pieces of non-asbestos rock, break it up and call
23 it asbestos. Correct?

24 A. If it is all non-asbestos rock and there is no
25 asbestos particles in there, that is correct.

1 Q. But what you have testified to in the past,
2 Dr. Longo, is that when one of your analysts sees a
3 non-asbestiform amphibole cleavage fragment, if it has
4 substantially parallel sides, if it has an aspect
5 ratio of 5-to-1 or greater and it is at least
6 .5 micrometers long, the analyst will count that as a
7 regulated asbestos structure. Correct?

8 A. If the analyst knows it is a cleavage fragment,
9 in the TEM, or we don't count cleavage fragments in
10 the PLM, no, you wouldn't count it. If it meets the
11 standard methodology for the counting rules by EPA,
12 10-to-1, they reject it, 5-to-1, it has the chemistry,
13 it has the right electron diffraction patterns, you
14 would count that.

15 MS. BROWN: Permission to read, your Honor?

16 THE COURT: Yes.

17 BY MS. BROWN:

18 Q. From the Longo testimony, binder at tab 511, I
19 would like to read a question and answer, Dr. Longo,
20 from your February 26, 2019, Olsen trial testimony at
21 page 1717, lines 3 to 13:

22 "QUESTION: When your firm MAS is analyzing
23 talc samples, if one of your analysts who is
24 conducting the test sees a non-asbestiform amphibole
25 cleavage fragment, it has substantially parallel

1 sides, if an aspect ratio of 5-to-1 or greater, and is
2 at least 5.5 micrometers long, the analyst will count
3 that as an asbestos structure. True?

4 "ANSWER: Meets that definition, that is true.

5 "QUESTION: If he finds those things, he will
6 count it as an asbestos structure. Correct?

7 "ANSWER: As a regulated asbestos in that
8 population, yes."

9 A. No. It's not that the analyst knew it was a
10 nonasbestos amphibole cleavage. It's if that
11 amphibole cleavage was there and it met the
12 definition, they would count it. The analyst --

13 Q. Dr. Longo, this was your testimony during the
14 Olsen trial. Correct?

15 A. I see it written there. I don't see what else
16 was asked in that. In TEM that is one of the issues.
17 An analyst would not count if he knew somehow it met
18 the definition it was nonasbestos amphibole cleavage
19 fragment. No, he would not count that if he knew.

20 THE COURT: She put it into the question. It
21 says: If your analyst is conducting the test and sees
22 a non-asbestiform amphibole cleavage fragment -- it
23 says it in that question that is what they are they
24 are seeing.

25 THE WITNESS: I see that.

1 Q. And your answer was:

2 "Yes, it meets that definition. And if he
3 finds it -- see, if he finds those things, a
4 non-asbestiform amphibole cleavage fragment, he will
5 count it as an asbestos structure."

6 And your answer was:

7 "As a regulated asbestos in that population,
8 yes."

9 That was your answer. Correct?

10 A. I would have to see if there is something more
11 to it, but that is what it states, yes.

12 Q. And one of the things you told us, Dr. Longo, is
13 that where you are identifying individual fibers as
14 asbestos, you are not trying to make a determination
15 about whether those minerals grew in the asbestiform
16 habit?

17 A. Or a single fiber without any information,
18 that's correct.

19 Q. But, Dr. Longo, the ISO method on which you rely
20 in fact says that it is necessary to discriminate
21 between the asbestiform and non-asbestiform analog of
22 these minerals; doesn't it?

23 A. That's correct.

24 Q. Let's take a look if we could at Exhibit A 75,
25 which is the ISO 22262-2 method that you rely on, and

1 I'll direct everyone's attention to page 14.

2 What this method is talking about are
3 tremolite, actinolite, richerite and winchite.
4 Correct?

5 A. That's correct.

6 Q. And what this ISO standard on which you rely
7 states is that these types of minerals generally occur
8 as accessory minerals. Correct?

9 A. That's what it states.

10 Q. And what this ISO method on which you rely
11 states is that since the non-asbestiform analogs of
12 the amphiboles are not generally regulated, it is
13 necessary to discriminate between the asbestiform and
14 the non-asbestiform analogs of those minerals.
15 Correct?

16 A. That is correct.

17 Q. Nevertheless, Dr. Longo, in making your call,
18 when your analysts are making the call, what they are
19 seeing measures up to a counting rule definition of a
20 fiber. They are not purporting to determine whether
21 or not that particle is asbestiform or not. Right?

22 A. The analysts do not make that decision, but they
23 are asbestiform. Asbestiform is the sample definition
24 of that. It forms like asbestos or fibrous,
25 especially the bundles. As pointed out by EPA, when

1 they look at the counting criteria for the aspect
2 ratio of 5-to-1 to 10-to-1, that most of the cleavage
3 fragments in analogs fall below 5-to-1.

4 Jim Millete pointed out, the best aspect ratio
5 is 5-to-1 and greater, as pointed out in Blount and
6 Campbell for --

7 Q. Dr. Longo, can you get a little closer to the
8 microphone.

9 Let's do this real quick. Where your analysts
10 identify individual fibers as asbestiform, they are
11 not purporting to make any determination as to whether
12 they grew in the asbestiform habit. True or not?

13 A. The analysts are not making that decision. The
14 only decision they are making is that it is fibrous,
15 which meets the asbestiform definition, and does it
16 have the morphology as stated by the Environmental
17 Protection Agency for regulated asbestos.

18 THE COURT: Your answer to the question was,
19 yes, they are not making that decision. Is that what
20 I heard?

21 THE WITNESS: Yes, ma'am.

22 THE COURT: Thank you.

23 Q. Let's talk in a little bit detail about the
24 AHERA regulation on which you rely. Okay?

25 A. Yes.

1 Q. You used the AHERA counting rules in this case.
2 Correct?

3 A. That is correct.

4 Q. And what AHERA is, it is a regulation that
5 stands for the Asbestos Hazard Emergency Response Act.
6 Correct?

7 A. That is correct.

8 Q. If we could take a look at slide 12, please.

9 What this regulation is really all about,
10 Dr. Longo, is when there has been asbestos found in
11 schools and it's been remediated, this regulation is
12 concerned about going back in and making sure the
13 school is safe for kids to go back. Correct?

14 A. Correct.

15 Q. So these counting rules that you rely on here
16 come from a regulation that is aimed at making sure
17 schools have been rid of asbestos. Correct?

18 A. The air samples are clean enough to allow people
19 back in, yes.

20 Q. But what that means, Dr. Longo, is that before
21 these regulations even come into play, you've had a
22 determination that there is asbestos-containing
23 materials in a school. Right?

24 A. Yes, that's correct.

25 Q. And asbestos-containing materials per this

1 regulation mean more than 1 percent. Correct?

2 A. Correct.

3 Q. And so what AHERA contemplates as No. 1, someone
4 has found more than 1 percent asbestos-containing
5 material in a school. True?

6 A. Yes, at times. If they -- only if the schools
7 or the institute decide that they feel that there is
8 no asbestos there, they have to test it. So for -- so
9 information to the schools, if they agree there is
10 asbestos, they don't have to do the testing. You are
11 only required to do the testing to determine asbestos
12 if you say there is no asbestos.

13 Q. First of all, there has been a determination of
14 an asbestos-containing material. Correct?

15 A. Correct.

16 Q. Second, there has been remediation at the
17 school. Right?

18 A. Correct.

19 Q. And then there is testing that's being done to
20 make sure that the school is safe for kids to go back
21 in. Right?

22 A. Correct.

23 Q. That's the context of these counting rules on
24 which you rely and which we saw in your PowerPoint
25 presentation with counsel. Right?

1 A. That's correct.

2 Q. And so if we look back at the Elmer, for
3 example, this definition of a fiber comes from that
4 same regulation we were just looking at. Right?

5 A. Yes.

6 Q. A regulation that doesn't even apply until there
7 has been a determination that there was at least a
8 1 percent asbestos-containing material in a school.
9 Right?

10 A. Sort of. It's based on the asbestos-containing
11 material as well as the same material that has
12 accessory minerals in it that include things like
13 tremolite, richerite -- and you have to understand,
14 even though, say, for W.R. Grace Monokote
15 Fireproofing, the majority of that material is made up
16 of Libby Montana vermiculite. Not only would you be
17 looking at the chrysotile there, you would be looking
18 at the accessory minerals tremolite, actinolite, and
19 that would be part of it.

20 A lot of these asbestos products like Zonolite
21 acoustical plastic have a lot of accessory minerals
22 that are tremolite and actinolite. So the laboratory
23 who was analyzing the samples may never have any idea
24 on what was taken out of the building. They just
25 count it the same all the way through.

1 Q. My question is much simpler than that. Let's do
2 it like this or we can read it and put it on the
3 screen: The question is: Before the counting rules
4 from AHERA ever come into play, you've had an analysis
5 that has found already in that school
6 asbestos-containing materials. Correct?

7 A. Maybe. They have some idea that there is
8 asbestos there. If they did the PLM analysis, yes.

9 Q. If it has been analyzed, that's correct?

10 A. That is a correct statement.

11 Q. The answer to my question, if someone has gone
12 in and analyzed it, there has been a determination
13 that the school contained asbestos-containing
14 materials. Correct?

15 A. Correct.

16 Q. And that's when the counting rules on which you
17 rely come into play. Right?

18 A. When you do the TEM analysis for any air sample
19 that has to do with that, outside, inside, you use the
20 standard methodology by the EPA to identify asbestos.

21 Q. My question was real simple. That is when the
22 counting rules on which you rely come into play,
23 right, Dr. Longo, when you use that protocol, that
24 standard methodology for any type of air sample
25 analysis, that would be correct, or any TEM analysis?

1 And, you know, because we just look at the
2 review of the levels that your analysts are claiming
3 to find here, the levels of asbestos your analysts
4 claim to find in Johnson & Johnson's product is
5 nowhere near 1 percent. Right?

6 A. They are less than 1 percent, that's correct.

7 Q. Significantly less than 1 percent. Right,
8 Dr. Longo?

9 A. Two to three orders of magnitude less.

10 Q. 3.3 millionths of a percent. Right, Doctor?

11 A. And higher.

12 Q. Up to 9.2 thousandth of a percent. Right?

13 A. Hundreds, thousands, three orders of magnitude.

14 Q. That's as high as it gets. Right?

15 A. For these samples, that's correct.

16 Q. I want to talk a little bit about your visual
17 TEM that your analysts in this case did. Okay?

18 A. Yes.

19 Q. Just to orient us, this TEM methodology, it
20 cannot tell me the difference when it comes to a
21 single fiber about whether or not it is asbestiform or
22 non-asbestiform. Right?

23 A. I think I have agreed in the past, looking at a
24 single fiber in a vacuum versus looking at a
25 population from a mine, numerous samples that what you

1 can say is regulated asbestos. But without any
2 additional information, I would not call it
3 asbestiform or non-asbestiform.

4 Q. You have been asked this question before.
5 Right?

6 A. Yes.

7 Q. Let's just see if we can agree and move on.

8 TEM cannot tell you if you identify a single
9 fiber whether or not it is asbestiform or
10 non-asbestiform. Correct?

11 A. Correct. I think I've been asked if it is in a
12 vacuum with no other information other than saying
13 it's regulated asbestos it would not say it's
14 asbestiform or non-asbestiform.

15 MS. BROWN: Permission to read, your Honor?

16 THE COURT: Yes.

17 MS. BROWN: Could I have Longo 666. This is
18 your trial testimony from February 20th, 2018, from
19 the Lanzo trial. I'll read page 3021, lines 4 to 9:

20 "QUESTION: My question to you, Dr. Longo, is
21 that transmission electron microscopy cannot tell you
22 if you identify a single fiber whether or not that
23 particle is asbestiform or non-asbestiform. Correct?

24 "ANSWER: That is correct."

25 Now, in addition, Dr. Longo, to your testimony

1 on this score, the ISO TEM method on which you rely
2 also states that it cannot discriminate between
3 individual fibers of asbestos and non-asbestos
4 amphiboles of the same amphibole mineral. Correct?

5 MR. BLOCK: Can you state which ISO standard
6 you are referring to by number, please.

7 MS. BROWN: ISO 13794, 1999, at page 8,
8 section 1.1. It is also on the slide.

9 BY MS. BROWN:

10 Q. Dr. Longo, this TEM method on which you rely
11 states right on its face, does it not, that the TEM
12 method cannot discriminate between individual fibers
13 of asbestos and non-asbestos analogs, correct?

14 A. That's what that particular method says for the
15 analysis of TEM samples.

16 Q. And that's the method that your analyst used to
17 analyze cosmetic talc. Correct?

18 A. No. We used the ISO 13794 for the definition of
19 fibers. The ISO 22262-1-2 provides the methodology
20 and it is the only method out there for cosmetic talc.

21 Q. You know, Dr. Longo, because you read it and
22 rely on it that ISO 22262-2 refers to this method as
23 indispensable for TEM analysis. Correct?

24 A. Correct.

25 Q. Now, while you have agreed that for a single

1 fiber you cannot distinguish between asbestiform and
2 non-asbestiform, in your view, Dr. Longo, when your
3 analyst identifies a bundle, it is by definition
4 asbestiform. Correct?

5 A. Correct.

6 Q. And your original report on the eBay samples was
7 done using TEM. Correct?

8 A. Correct.

9 Q. And we spoke earlier this morning, you used a
10 modified Blount preparation and paired that with TEM
11 for your March 2018 report. Right?

12 A. Correct.

13 Q. And that report, as we spoke about earlier, was
14 by and large from eBay samples purchased by the
15 plaintiffs' lawyers. Correct?

16 A. Correct.

17 Q. And that report was the subject of your
18 testimony around the country for about two years.
19 Correct?

20 A. I think that's correct, yes.

21 Q. You are not using that methodology here as it
22 relates to the MDL samples. Correct?

23 A. No. It's the same thing. The ISO 22262-2 heavy
24 liquid density separation is almost identical to the
25 Blount separation.

1 Q. But you know it is not the same at all?

2 A. That is not true. It uses the centrifuge and
3 the heavy liquid density. The main difference is it
4 has a 2.81 density versus the --

5 THE COURT: Keep your voice up.

6 THE WITNESS: -- has 2.85. It is very close.

7 Q. The method you used for the beginning of your
8 testimony in this litigation, Dr. Longo, it was
9 modified from Dr. Blount's paper. Correct?

10 A. Correct.

11 Q. And you changed some things in Dr. Blount's
12 method. Correct?

13 A. Correct. We changed that from the 2.81 heavy
14 liquid density, and we went to 2.85, and we used TEM
15 instead of PLM.

16 Q. And you changed how long you spun the
17 centrifuge. Correct?

18 A. We changed the RPMs and we changed the length of
19 time.

20 Q. And unlike Dr. Blount, she paired her
21 preparation with PLM in your original report that you
22 are not using anymore; you paired that with TEM.
23 Correct?

24 A. Yes, ma'am.

25 Q. And this modified Blount plus TEM method is not

1 a method you have used to test the MDL samples.

2 Correct?

3 A. I would disagree because it is the same protocol
4 that we modified to. Go over it. We used 2.85 heavy
5 liquid density separation in the Blount method. We
6 used that in the ISO 22262-2 per as the method. We
7 used transmission electron microscopy instead of PLM
8 in the Blount method. In the 22262-2 it says you can
9 use this preparation for PLM, SEM and TEM.

10 Q. How long do you spin the samples with the
11 modified plus TEM?

12 A. I believe it was 60 minutes or so.

13 Q. How long do you spin the samples in the MDL?

14 A. I believe they are the same.

15 Q. Let's move on, Dr. Longo.

16 In your original report you found that
17 53 percent of the structures that your analysts were
18 reporting were bundles. Correct?

19 A. Correct.

20 Q. And in your MDL report, which now employs the
21 ISO methodology and -- are I'll rephrase the question.

22 Now, in your updated MDL report, Dr. Longo,
23 your analysts are now finding 93 percent bundles.

24 Correct?

25 A. That is correct.

1 Q. And that is in fact an increase of 40 percent in
2 the number of bundles that your analysts purported to
3 find in your original report versus your MDL report.
4 Correct?

5 A. That's correct. But you are not really
6 comparing the same thing between the two.

7 Q. What I want to compare, Dr. Longo, are some of
8 the pictures from your original report with some of
9 the pictures from your MDL report.

10 So if we could look at Longo at 520 A, this is
11 an image on the left from your 2017 report where your
12 analysts concluded that they were looking at a single
13 fiber. Correct?

14 A. That's correct.

15 Q. And the image on the right is from your MDL
16 report where your analysts concluded they were looking
17 at a bundle. Correct?

18 A. Correct.

19 Q. And to orient us again about this bundle fiber
20 business, when it's a single fiber, you can't tell if
21 it is asbestiform or non-asbestiform, but in your
22 view, when it is a bundle, it is by definition
23 asbestiform. Right?

24 A. Well, no. Wait a minute. When we have a
25 population of fibers here and not all just 5 to 1 or

1 greater but 10-to-1, 20 to 1, 30-to-1, and they are
2 coming out of a population in a particular mine and a
3 particular container, they meet the definition of
4 asbestiform because asbestiform definition is fibrous-
5 like asbestos. So we are not dealing with every time
6 you see a single fiber that meets the standard
7 methodology that you have a population of them in a
8 population of bundles that's asbestiform.

9 Q. Dr. Longo, in your opinion a bundle is by
10 definition asbestos. True?

11 A. Asbestiform, a single fiber is asbestos if it
12 meets the definition.

13 Q. In your opinion, a bundle is by definition
14 asbestiform. Correct?

15 A. Yes.

16 Q. And in your original report the picture on the
17 left shows a call by your analyst that it is a single
18 fiber, and the picture on the right shows a call it is
19 a bundle. Correct?

20 A. Yes.

21 Q. The next one, this is a picture on the left from
22 your 2017 report where your analyst at MAS made the
23 call it was a single fiber. True?

24 A. That is true.

25 Q. And we have a picture on the right where your

1 analyst made a call it was a bundle. Correct?

2 A. That is correct.

3 Q. One more, Dr. Longo, comparison from the two
4 reports. We have a picture on the left here from the
5 2017 report where your analysts concluded this was a
6 single fiber, and a picture from the right where the
7 call was made that it was in fact a bundle. Correct?

8 A. That is correct.

9 Q. And the truth is, Dr. Longo, when it comes to
10 the determination about whether something is a single
11 fiber or a bundle, you rely on your analysts to
12 correctly distinguish between a single fiber and a
13 bundle. Correct?

14 A. That is correct.

15 Q. And this determination is it a fiber or a bundle
16 is not something the microscope automatically does.
17 Right?

18 A. It does not automatically do it.

19 Q. This is a determination made by the analyst
20 sitting down and looking at the samples. Correct?

21 A. Yes. The analyst is sitting down looking at the
22 sample.

23 THE COURT: You have to stay closer to the
24 microphone, please.

25 A. The analyst can change the focal plane. The

1 analyst can flip in another type of lens that
2 increases the magnification by 10,000 times -- excuse
3 me -- 10 times. So the analyst is making the
4 decision. These are two different things. One is .4.
5 One is .2. And the analyst can see that while he is
6 doing it. The one before that you can actually see
7 some of these fibers protruding at the end of it. So
8 the analyst does make the decision, but these are some
9 that you are looking at it on a two-dimensional plane.
10 You have to be sitting at the microscope to see the
11 full breadth of it.

12 Q. That's why it's hard for us not having you as
13 the person who actually looked at the microscope to be
14 able to look back and explain what happened. Right?

15 A. No. You don't need that.

16 Q. You were not the person who sat at the
17 microscope and made the calls on these fibers and
18 bundles. Correct?

19 A. That is correct. But we've had verification
20 from outside laboratories come in and verify the
21 fibers and bundles.

22 THE COURT: How do they verify?

23 THE WITNESS: They get the TEM grid. We tell
24 them what grid openings to look at. They go and look
25 at it and say "fiber," "bundle" and that it is

1 anthophyllite or tremolite. We had an independent lab
2 do that, Lee Poye, and he found 90 percent bundles in
3 those MDL samples wherein those same samples we found
4 80.

5 MS. BROWN: This sounds like something that
6 has not been disclosed. I'm going to ask him
7 something very similar to that right now.

8 MR. BLOCK: He gave that testimony on direct
9 and the verification that was done -- and also can we
10 take a couple of minute bathroom break?

11 THE COURT: We will. You want to do it now?

12 MR. BLOCK: No. At the Court's convenience.

13 THE COURT: We will in a few minutes. I want
14 to break up the afternoon appropriately.

15 BY MS. BROWN:

16 Q. Following up, Dr. Longo, on Her Honor's
17 question, one of the things you do from time to time
18 at your MAS shop is do some reports on your analysts.
19 Correct?

20 A. Correct.

21 Q. And one of the things you commissioned in
22 September of 2018, you and Dr. Rigler, was
23 co-efficient of variation report. Right?

24 A. That is correct.

25 Q. And incidentally, Dr. Longo, Dr. Rigler is your

1 co-author on your MDL reports. Correct?

2 A. That is correct.

3 Q. And Doctor Rigler, as of late, is no longer
4 employed by MAS. Correct?

5 A. That is correct.

6 Q. And you have declined in your depositions to
7 talk about the circumstances that led to Dr. Rigler's
8 departure. Correct?

9 A. Correct. It is our company policy not to
10 discuss why people leave MAS, but I will state that.

11 Q. Dr. Rigler is getting ready to turn 65 --

12 THE COURT: He's not old.

13 A. And he's been commuting 90 miles each way for
14 30 years, and I won't tell you why he left. But I
15 will tell you the entire time Dr. Rigler, from the day
16 he started until the day he decided to leave MAS, he
17 was an outstanding employee.

18 Q. I want to talk about a report that Dr. Rigler
19 and yourself commissioned, the coefficient of
20 variation report, from September of 2018. Are you
21 with me?

22 A. I am.

23 Q. All right. This was an analysis to determine
24 the level of variation in how your analysts report
25 asbestos from one analyst to the next in the same

1 sample. Correct?

2 A. Yes and no. It was to determine how many
3 asbestos structures per grid opening that they
4 counted. It was never designed for a fiber bundle
5 coefficient variation.

6 Q. For counting asbestos structures from one
7 analyst to the next. That's what this report was
8 aimed at doing. Right?

9 A. Exactly asbestos structures.

10 Q. One of the things you know, Dr. Longo, is that
11 when your analysts report on the structures, they are
12 seeing under the TEM microscope, they fill out a count
13 sheet. Right?

14 A. That is correct.

15 Q. And you have produced a whole lot of count
16 sheets in this litigation. Correct?

17 A. That is correct.

18 Q. And count sheets -- and I think I have one here
19 -- a count sheet is something that looks like this.
20 Correct?

21 A. Yes, ma'am.

22 Q. And so when you say they are figuring out the
23 structures, this is where they would record that
24 information. Correct?

25 A. That and take a photograph.

1 Q. And so these are the types or the categories of
2 information that your analysts are recording when they
3 are looking at a microscope under TEM. Correct?

4 A. That is correct.

5 Q. So you ran this coefficient of variation
6 exercise with Dr. Rigler in 2018. Right?

7 A. Yes.

8 Q. And so to do that, what you did is you bought a
9 bottle of Johnson's Baby Powder off the shelf, and you
10 spiked it or you added to it tremolite asbestos and
11 anthophyllite asbestos. Right?

12 A. Yes.

13 Q. And you spiked it with .3 percent asbestos?

14 A. Yes.

15 Q. Orders of magnitude more that your analysts are
16 claiming to find in Johnson & Johnson's Baby Powder.
17 Right?

18 A. By TEM, that's correct.

19 Q. And you had four analysts look at the same grid
20 to analyze it for tremolite and anthophyllite
21 asbestos. Is that correct?

22 A. That's correct.

23 Q. Your analysts are trained to distinguish between
24 fibers and bundles. Correct?

25 A. Yes.

1 Q. As part of the exercises here they would have
2 filled out information about what they were seeing.
3 Correct?

4 A. Yes.

5 Q. Including whether they were seeing a bundle or
6 whether they were seeing a fiber. Right, Dr. Longo?

7 A. Per the instructions of just doing structures,
8 yes, they put that down.

9 Q. And you collected that information and put it
10 into a report. Correct?

11 A. On the counting errors, yes. But the count
12 sheets were there.

13 Q. And if we could look at the slide on the
14 findings, I want to talk to you a little bit about the
15 number of times your analysts agreed or disagreed on
16 whether what they were seeing was a fiber or whether
17 what they were seeing was a bundle. Are you with me?

18 A. Is this the tremolite or the anthophyllite one?

19 Q. This is the tremolite one. So your analysts did
20 this thing twice. Right?

21 A. One for anthophyllite and once for tremolite.

22 Q. I want to talk about their findings when they
23 did it for tremolite. Okay?

24 A. Okay.

25 Q. Those are the same four analysts who were

1 looking at the TEM samples in the MDL. Correct?

2 A. Correct.

3 Q. So these are the same four folks who back in
4 September of 2018 looked at the same TEM grid and
5 filled out individual count sheets like the one we
6 just looked at. Right?

7 A. That is correct.

8 Q. So for grid opening No. 1 on our list, AE --
9 E-2, analyst No. 1 looked at the same grid opening as
10 the other three and called it a bundle. Right?

11 A. Correct.

12 Q. Analysts 2 and 3 looked at the same exact thing
13 and called it a fiber. Right?

14 A. Yes.

15 Q. And analyst 4 was with No. 1 and called it a
16 bundle. Right?

17 A. Correct. There was 50 percent agreement on the
18 structures. 50 percent said it was a fiber and
19 50 percent said it was a bundle.

20 Q. The second time everyone agreed it was a fiber.
21 Right?

22 A. Correct.

23 Q. The third time, first three folks called it a
24 bundle but analyst 4 called it a fiber. Right?

25 A. That would be 75 percent agreement.

1 Q. And I thought I heard you on your direct
2 examination, Dr. Longo, I thought I heard you say
3 there is no right. Do you remember giving that
4 testimony?

5 A. Yes. You are not starting with a known. It is
6 an agreement between the analysts. So you can't say
7 any of them are wrong. It is their agreement. That's
8 how the National Voluntary Laboratory Accreditation
9 Program does it.

10 Q. Now, you are referring to the NVLAP standard
11 that you guys are accredited with. Right?

12 A. Yes.

13 Q. You know what that standard requires; right,
14 Dr. Longo?

15 A. 90 percent.

16 Q. It requires that every time you have a group of
17 analysts like this looking at the same thing that they
18 say they make the same call 90 percent of the time.
19 Right?

20 A. Right. I think we have talked about this in the
21 past. This test was only designed to determine the
22 counting statistics. We never asked the analysts to
23 do a fiber bundle agreement study.

24 Q. Let's go back to our list.

25 A. We have done that for NVLAP 90 percent --

1 Q. Dr. Longo, we are talking about what has been
2 produced in this case and at issue here. So I want to
3 talk about this study where, as part of recording what
4 they saw, your analysts made the call about whether
5 they were looking at a fiber or whether they were
6 looking at a bundle; and if we go down this list, you
7 can see that your analysts agreed only once. Correct?

8 A. They agreed not only once. The way you are
9 doing that is inappropriate.

10 Q. Dr. Longo, you understand that there were times
11 when three of your analysts didn't see anything at all
12 and one of them thought they saw a fiber. Do you see
13 that?

14 A. You can't compare that.

15 Q. You see there were times where three people
16 didn't see anything at all but analyst 2 saw a bundle.
17 Right?

18 A. No, this is not how you do these methods. You
19 can't say that. What you are saying is it is the
20 example I used earlier. If you had 100 analysts and
21 95 of them call it a bundle and five of them call it a
22 fiber, you would draw a red line all the way through
23 that.

24 Q. Here is the thing, Dr. Longo, the requirement is
25 90 percent agreement, and even on your chart you

1 showed on direct examination your folks were not
2 agreeing 90 percent of the time. That's true?

3 MR. BLOCK: Objection. Compound question.

4 THE COURT: If I can go back to how many
5 compound questions were asked today on both on direct
6 and on cross. So are you really getting to that now?

7 MS. BROWN: Your Honor, I'm at the end of
8 this, if this is an appropriate time for the Court, I
9 think we're done with this report.

10 THE COURT: Okay. We'll take the break now.

11 THE DEPUTY CLERK: All rise.

12 (Recess.)

13 (Continued on the next page.)

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1 THE DEPUTY CLERK: All rise.

2 THE COURT: Thank you.

3

4 **WILLIAM E. LONGO**, resumed.

5

6 CROSS-EXAMINATION

7 BY MS. BROWN: (Continued)

8 Q. Welcome back, Dr. Longo.

9 A. Thank you.

10 Q. Dr. Longo, I want to talk a little bit about
11 some of your PLM analysis in this case. Okay?

12 A. Yes.

13 Q. Prior to issuing your MDL report, you had not
14 used PLM in your initial report. Correct?

15 A. That is correct.

16 Q. And in fact you were of the opinion back then in
17 2017 and 2018 that PLM basically wasn't going to work.
18 Correct?

19 A. Using the standard method, yes, ma'am.

20 Q. You were of the opinion that PLM was not
21 appropriate for this kind of cosmetic talc analysis.
22 Correct?

23 A. That is correct.

24 Q. You testified that in your opinion PLM, which,
25 just to orient us, consists of two of the three

1 methods you are using here. Right?

2 A. That's correct, the heavy density liquid Blount
3 method and the ISO 22262-1 method.

4 Q. And so just to reorient us, Dr. Longo, you have
5 used in the MDL ISO PLM. Correct?

6 A. Yes.

7 Q. Blount PLM?

8 A. That is correct.

9 Q. And ISO TEM. Correct?

10 A. Yes, the talc method by ISO for TEM.

11 Q. Two of those methods involve the polarized light
12 microscopy method. Right?

13 A. Yes.

14 Q. Prior to the MDL you had testified in a number
15 of different places that PLM was not an appropriate
16 method for testing cosmetic talc?

17 A. That is correct.

18 Q. And you testified actually that you were of the
19 view that it could not pick up trace levels of
20 asbestos. True?

21 A. That is true.

22 Q. And so your original report on the eBay samples
23 dealt only or employed only TEM. Correct?

24 A. That is correct.

25 Q. Now, here in the MDL you are now using two PLM

1 methods. Fair enough?

2 A. That is fair, yes.

3 Q. One of those comes out of the ISO method.

4 Correct?

5 A. Correct.

6 Q. I would like to use the Elmo for a moment, if I
7 could. You put up this slide earlier today with
8 counsel for the plaintiffs. Do you remember that?

9 A. I do.

10 Q. And this slide speaks to the ISO 22262-2 method.
11 Correct?

12 A. Correct.

13 Q. And one of the things that was a little strange
14 about this slide is that the last sentence is cut off.
15 Right, Dr. Longo?

16 Do you see that?

17 A. Yes.

18 Q. You do use 22262-2, correct?

19 A. Correct.

20 Q. And this was the subject of a slide when you
21 were talking about how this is an appropriate
22 procedure and one that you employed in the MDL.
23 Correct?

24 A. That is correct.

25 Q. All right. So let's take a look, though, at the

1 actual standard, and if we can't get to the end of
2 that sentence, which begins "quantify any asbestiform
3 amphibole in the centrifuge." And so if we go to the
4 actual method, we will see near the end of that
5 sentence if we can bring it up.

6 Here is the rest of the sentence which says,
7 "...quantify any asbestiform amphibole in the
8 centrifuge by the point counting procedures specified
9 in 14.2.3." See that?

10 A. Yes.

11 Q. Point counting is not a method you employed in
12 this case. Right?

13 A. That is correct. The same method discusses
14 point counting when you have two different size
15 densities in the material such as talc and amphibole
16 asbestos. It is in this method where it specifically
17 says point counting is not recommended if you have
18 materials that have two different types of densities
19 and two different sizes because it will impart an
20 error factor. Yes, it says that. But it also says
21 not to use point counting.

22 Q. Let's go to the end of the sentence that we
23 didn't see, that you should quantify asbestiform
24 amphibole by point counting. My question was: You
25 didn't do point counting here. True?

1 A. To be fair, we didn't do point counting because
2 the method says don't do point counting when you have
3 these types of samples.

4 THE COURT: Your answer is you did not do
5 point counting?

6 THE WITNESS: That is correct, Judge.

7 Q. I want to give a little context to what we are
8 talking about here.

9 When you employed the ISO PLM method, your
10 analysts in some instances came up with a weight
11 percentage of the amphibole that they were seeing. Is
12 that correct?

13 A. That's correct.

14 Q. And in this case your analysts here recorded
15 less than .1 tremolite actinolite. Correct?

16 A. Correct.

17 Q. And to get that information, your analysts did
18 not use the point counting method. Correct?

19 A. No. They used the appropriate method but not
20 point counting.

21 Q. What you tell us in your report -- first of all,
22 your PLM analyst is Mr. Paul Hess. Correct?

23 A. Correct.

24 Q. And Mr. Hess did all of the PLM analyses in this
25 case. Correct?

1 A. Correct.

2 Q. And what Mr. Hess did -- you tell us in your
3 report -- is that for positive samples, a visual
4 estimation of the quantity of asbestos observed was
5 based on eye calibration through review of lab
6 generated weight percent standards. Correct?

7 A. Correct.

8 Q. What that means is that Mr. Hess looked at the
9 area that was supposedly covered by asbestos versus
10 the entire area and compared them against a weight
11 percent standard. Correct?

12 A. The entire of the other particulates, that's
13 correct.

14 Q. What he used, according to your report,
15 Dr. Longo, was a lab-generated weight percent
16 standard. Correct?

17 A. That is correct.

18 Q. And the "lab generated," that means something
19 produced out of your shop MAS. Correct?

20 A. Yes.

21 Q. And the way you made those weight percent
22 standards was based on spiking a sample of Johnson &
23 Johnson's Baby Powder. Right?

24 A. Correct.

25 Q. And once you spiked it, and mixed in what you or

1 someone at your lab considered to be appropriate
2 materials, you got a weight percent as your standard.
3 Correct?

4 A. Correct.

5 Q. And you, Dr. Longo, did not personally generate
6 those standards. Correct?

7 A. I did not.

8 Q. An employee of yours did that. Correct?

9 A. That is correct.

10 Q. And you did not supervise or evaluate the
11 employee who was doing that?

12 A. I don't understand the question.

13 Q. You didn't observe this employee. Ms. Victoria
14 Panarello, when she was creating these MAS weight
15 percentage standards. Correct?

16 A. That I don't recall. I'm in and out of the lab
17 quite a bit.

18 MS. BROWN: Permission to read, your Honor?

19 THE COURT: Okay.

20 Q. This is from your testimony, binder Exhibit
21 D-48. This is from your February 5, 2019 MDL
22 deposition at page 271, lines 16 to 21:

23 You were asked the question in your MDL
24 deposition 271, lines 16 to 20, as it relates to the
25 work of Ms. Panarello?

1 "QUESTION: Did you monitor her when she did
2 that?

3 "ANSWER: Did I sit here and stand there and
4 watch her? No.

5 "QUESTION: Did you monitor her in any other
6 way?

7 "ANSWER: No."

8 And you, Dr. Longo, to orient us to what's
9 being done with these MAS generated-standards, which
10 is what Mr. Hess is using when he was doing his visual
11 examination about how much asbestos he's estimating is
12 in the sample. Correct?

13 A. It is a visual estimate based on past standards,
14 based on these petrographics that show what the
15 various percentages are. So there is a couple of
16 things.

17 Q. And you know that ISO, the standard on which you
18 rely, it says that the accuracy and reproducibility of
19 those visual estimates is very limited. Correct?

20 A. That's correct.

21 Q. You know, Dr. Longo, that you did not include,
22 in connection with your MDL report, the weight
23 standards that an employee of MAS created. Correct?

24 A. That's correct.

25 Q. And so either the MAS employee who created the

1 standard nor the MAS employee who used the standard
2 have provided testimony in the MDL. Correct?

3 A. That is correct.

4 Q. You didn't include any information, Dr. Longo,
5 in your MDL report and supporting materials that would
6 allow someone else to replicate or figure out the work
7 that your employees did in coming up with the weight
8 percentages under PLM. Correct?

9 A. No, that's not quite fair. The experts for
10 Johnson & Johnson have splits of every one of these
11 samples. They have the ability to follow the
12 protocol. They have the ability to do the ISO
13 22262-2. They have the ability to do the heavy liquid
14 density separation. They did PLM. They have been in
15 our lab and done TEM and verified these analyses.
16 That's not fair to say there is no way to reproduce --

17 THE COURT: She's asking a very specific
18 question about taking out the weight percentages.
19 Where does that appear so someone could replicate.
20 That was the focus of the question. Can you answer
21 that question now.

22 Do you want to ask it again.

23 MS. BROWN: Yes, your Honor.

24 Q. To follow up on the Judge's question, and what I
25 was after, Dr. Longo: This process that was done at

1 MAS used MAS-created weight percent standards.

2 Correct?

3 A. Correct. You want to know what those weight
4 percent standards are?

5 Q. No. I have a different question. You did not
6 include those MAS weight percent standards in the
7 materials you produced in the MDL. Correct?

8 A. The actual samples themselves?

9 Q. The standards, Dr. Longo, the standard that your
10 employee used to estimate how much asbestos he thought
11 was in a sample he was looking at under PLM; you did
12 not produce those. Correct?

13 A. I'm just trying to understand. Produce the
14 actual spiked talcum powder sample with the asbestos
15 in it?

16 Q. Dr. Longo, you did not include in your MDL
17 report any information concerning the data that was
18 generated in your lab in creating these weight percent
19 standards against which Mr. Hess compares the sample
20 to determine how much asbestos he thinks is in
21 Johnson's Baby Powder?

22 A. Now I understand. I did not produce that data.

23 Q. Dr. Longo, we can agree one of the cornerstones
24 of the scientific method is that results are capable
25 of validation. Fair?

1 A. That's fair.

2 Q. And validation is often described in terms of
3 producing results that are both repeatable and
4 produceable. Correct?

5 A. That is correct.

6 Q. And one of the things you did here as part of
7 your work was to send some of the samples that your
8 analyst tested to another lab. Correct?

9 A. Yes.

10 Q. And that's the J-3 lab that Mr. Poye works at.
11 Correct?

12 A. Correct.

13 Q. And you have known Mr. Poye for a long time.
14 Correct?

15 A. A few years.

16 Q. And you believe J-3 is a very good lab.
17 Correct?

18 A. I do.

19 Q. In fact, it was you who selected Mr. Poye and
20 recommended Mr. Poye as someone you could send your
21 samples to in this context. Correct?

22 A. That's correct.

23 Q. And so what happened here is that in June of
24 2018 you sent 79 samples to Mr. Poye for testing by
25 X-ray diffraction as well as polarized light

1 microscopy or PLM. Correct?

2 A. That is correct.

3 Q. And you instructed Mr. Poye at J-3 to use the
4 ISO PLM method. Correct?

5 A. Correct.

6 Q. Now, Mr. Poye had done this exercise of
7 verification of your work in the past. Correct?

8 A. Only the TEM. We had sent previous samples to
9 him for the R-93 and the XRD, but we had not performed
10 any R-93. So there was no verification in, I guess
11 I'll call, the initial samples.

12 Q. In the initial eBay report you had also sent
13 some of your work to Mr. Poye for testing. Correct?

14 A. That's correct.

15 Q. And Mr. Poye employed a test called the EPA R-93
16 test. Correct?

17 A. Yes, ma'am.

18 Q. That is not a method that you used here. Right?

19 A. No.

20 Q. And in the MDL, when you sent the MDL samples to
21 Mr. Poye, you told him to use a method other than the
22 R-93. Correct?

23 A. That is correct.

24 Q. You told him to use the ISO method. Correct?

25 A. Correct, since the ISO 22262-1 and 2

1 specifically talks about talc and cosmetic talc. It
2 is the only method out there that specifically has
3 cosmetic talc in it. That's why that method is
4 chosen.

5 Q. And, ultimately, Dr. Longo, Mr. Poye tested 22
6 of the same samples that your analyst at MAS had
7 tested by ISO PLM. Correct?

8 A. Yes, ma'am.

9 Q. What that means is we had your lab and
10 Mr. Poye's lab running the same method on the same 22
11 samples. Correct?

12 A. Not really.

13 Q. Let me rephrase, Dr. Longo. You told Mr. Poye
14 to use the ISO PLM method. Correct?

15 A. Correct.

16 Q. And you sent him samples from the samples that
17 your shop had tested. Correct?

18 A. That is correct.

19 Q. And the reason, as evidenced in your report,
20 that you did that was as part of a verification
21 exercise. Correct?

22 A. That is correct.

23 Q. And the title of the report is in fact
24 "Verification." Correct?

25 A. Can I see the report?

1 Q. Sure. We'll get that right away.

2 While I get that, Dr. Longo, the 22 samples
3 that you sent to Mr. Poye, your lab had found asbestos
4 in eight of them. Correct?

5 A. That is correct.

6 Q. And when you sent them to Mr. Poye, however, his
7 lab did not detect asbestos in any of them. Correct?

8 A. That is correct.

9 Q. And he was using the same method, right?

10 And you, in fact, contained the results of
11 Mr. Poye's ISO PLM in your February 2019 report.
12 Correct?

13 A. That is correct. We are both using the ISO
14 22262-1, but the amount of work going into -- in
15 particular analysis is different.

16 Q. I want to talk about that.

17 Before we talk about some information that you
18 have learned recently, I want to make sure we are
19 clear. The same test methods were used by both your
20 shop and Lee Poye's shop. Right?

21 A. It is the same test method, but it is a
22 different level of examination that we are using
23 versus Lee Poye. It is not really fair to compare the
24 two.

25 Q. When you sent the samples to Mr. Poye, you asked

1 him to employ the ISO PLM method. Correct?

2 A. Correct.

3 Q. And you didn't give him any other additional
4 instructions about how long he should spend analyzing
5 the samples. Correct?

6 A. No.

7 Q. And the ISO PLM method itself does not contain
8 any restrictions or guidance or limitations about how
9 long a microscopist should spend on a sample?

10 A. That's correct.

11 Q. When you sent the samples to Mr. Poye, you did
12 not instruct him to use a particular piece of
13 equipment or a particular lens on his equipment when
14 he was analyzing these samples. Correct?

15 A. No. We asked him just to use the ISO 22262-1
16 method. However, we have a high resolution camera.
17 You can see some of the photographs we have up there,
18 how good the resolution is on a high definition
19 screen. We have a different objective lens that takes
20 out -- corrects the aberrations, and our analyst is
21 not given any time that they have to complete a
22 sample. Paul Hess may have spent two to six hours on
23 an individual sample. I agree they are both the same
24 method, but the level of analysis between the two is
25 different.

1 Q. Let's break those down, Dr. Longo.

2 One of the reasons that you have come to
3 believe would explain the fact that your lab found
4 asbestos in eight of the samples, and Mr. Poye's lab
5 did not, is a high resolution camera. Is that what
6 you said?

7 A. Not the only thing.

8 Q. His resolution camera is one of the reasons you
9 have come to believe may explain the separate results.
10 Is that right?

11 A. A high resolution camera that is essentially a
12 video camera, that is in realtime that he can examine
13 the sample looking at a high definition monitor as he
14 is moving the stage and the dispersion staining.

15 Q. As it relates to the high resolution camera,
16 your shop in Georgia installed that camera
17 specifically for analyzing talc for asbestos; didn't
18 you?

19 A. We did.

20 Q. And all of the work your shop has done analyzing
21 contaminate for asbestos has been done in the context
22 of litigation. Correct?

23 A. That is correct.

24 Q. One of the things you testified, these results
25 from Lee Poye's testing were made available to you in

1 July of 2018. Do you recall that?

2 A. I think that is when we got the report back.

3 Q. For a number of months following that you were
4 asked questions, What do you think explain these
5 different results? Do you remember that?

6 A. I do.

7 Q. All the way through your deposition in the MDL
8 you remained unsure of what might explain the
9 difference. Right?

10 A. Correct.

11 Q. And one of the things you posited in some of
12 your depositions over that period of time was, Well,
13 one thing we could do is send these samples to an
14 independent third-party and have it checked out,
15 right?

16 A. I don't believe I said that, is to have not a
17 third-party but take the standards and get together
18 with Lee Poye's group and see how it is different.

19 Q. You also testified, did you not, that one of the
20 things you could do is have another lab check out the
21 inconsistencies. Right?

22 A. I don't recall that. But that's possible.

23 Q. Is it fair to say, sitting here today,
24 Dr. Longo, you have not sent those samples that we are
25 discussing out to another lab? Correct?

1 A. I have not, no. The samples, of course, went to
2 the RJ Lee group.

3 Q. And one of the things that has happened since
4 your deposition in the MDL is that you have had a
5 telephone conversation with Mr. Poye. Correct?

6 A. Correct.

7 Q. And it was you who initiated the telephone
8 conversation. Correct?

9 A. Correct.

10 Q. And you called Mr. Poye to explore the reason
11 that your analysts had eight positive samples where
12 the J-3 lab had none. Correct?

13 A. Correct. I wanted to see if there was anything
14 we were doing differently using a basic polarized
15 light microscope and using the same method.

16 Q. And since that time you have satisfied yourself
17 that you have identified the reasons for the
18 differences between your shop's findings and
19 Mr. Poye's findings. Correct?

20 A. It is an explanation. We should do some round
21 robins and get things in line, but it is an
22 explanation of the difference.

23 Q. And your current working explanation for why
24 your shop reached a different conclusion than
25 Mr. Poye's shop has to do in part with the high

1 resolution camera we were just discussing. Right?

2 A. It is everything. I can't say the high
3 resolution camera does anything different but probably
4 has more to do with the aberration corrected optical
5 lens, the lens on that, and the time that goes into
6 it.

7 Q. The other thing, Dr. Longo, that you just
8 identified and which you mentioned a little earlier is
9 the time that your analysts are spending on these
10 samples versus the time Mr. Poye's folks are spending.
11 Is that right?

12 A. According to Mr. Poye they didn't spend that
13 much time on it.

14 Q. I believe it is your understanding, though, that
15 Mr. Hess who does the PLM for the MDL -- correct?

16 A. Correct.

17 Q. Your understanding is that Mr. Hess spends about
18 two to six hours per sample. Right?

19 A. Depending on what's in the sample, yes.

20 Q. And your understanding is that Mr. Poye's
21 analysts do not spend as long. Correct?

22 A. For PLM analysis, that's what he stated to me.

23 Q. And having spoken to Mr. Poye and come to the
24 understanding that a combination between a lens or the
25 equipment and the time the analyst spent, you have

1 become satisfied, you have come to understand the
2 differences in the results of your lab and Mr. Poye's
3 lab. Correct?

4 A. It is an explanation. I'll be satisfied when we
5 can come to the same conclusion with spiked samples;
6 it is an explanation on the differences for eight out
7 of the 22.

8 Q. And one of the things that Mr. Hess does when he
9 examines a sample under PLM is to fill out a count
10 sheet or some kind of a report about what he is
11 seeing. Right?

12 A. Correct.

13 Q. And we looked at some of those this morning, but
14 the report contains basic information, does it not,
15 about who is doing the analysis and when they are
16 doing it and what they are finding. Correct?

17 A. Correct.

18 Q. And you, of course, have produced all of those
19 reports for us here today, and you reviewed them in
20 advance of your testimony. Right?

21 A. I didn't look through the PLMs. Hopefully, they
22 are all there.

23 Q. One of the things that is contained in the
24 documentation of the samples that Mr. Hess reviewed
25 are the dates on which he reviewed the samples.

1 Correct?

2 A. Correct.

3 Q. And so if we go back and we look at some of
4 these PLMs, we can see, for example, how many samples
5 Mr. Hess analyzed on, for example, December 13th,
6 2018. Correct?

7 A. That is correct.

8 Q. And so if we could go to the slide that starts
9 out "this analysis" -- and we have a smaller version
10 of the document, if it would be easier for you -- we
11 can see that on December 13th Mr. Hess -- I'll put one
12 up on the ELMO so we can orient ourselves here. This
13 is the documentation of Mr. Hess's work at your shop.
14 Correct?

15 A. It is.

16 Q. And so some of these issues from his PLM
17 analysis in December 13th of 2018 -- the client here
18 is the Beasley Allen law firm, and this is the result
19 of his findings. Correct?

20 A. Correct.

21 Q. One of the things that you could do is go
22 through all of these and figure out what Mr. Hess --
23 what samples Mr. Hess reviewed on which days.
24 Correct?

25 A. That's correct.

1 Q. By doing that, Dr. Longo, you can figure out in
2 fact how long it took Mr. Hess to review some of these
3 samples. Fair enough?

4 A. That's fair enough.

5 Q. So let's take, for example, December 13th of
6 2018, and we can go back to the slide, and I'll
7 represent to you, Dr. Longo, we have a packet of the
8 PLM analysis that Mr. Hess did on December 13th, 2018.
9 So we have sample 69757 he analyzed by PLM on that
10 day.

11 If you pull all of the sample PLM sheets from
12 December 13th we can see how much work Mr. Hess did on
13 that day. Here we have the number of samples that
14 were analyzed by Mr. Hess just on December 13, 2018.
15 Is that right. Dr. Longo?

16 A. If those dates are correct, that is right.

17 Q. 13 samples Mr. Hess analyzed on December 13th,
18 2018. Right?

19 A. If those are the dates, yes. Yes.

20 Q. That would mean he spent 78 hours on
21 December 13th, 2018, analyzing PLM samples if in fact
22 he spent six hours a sample. True?

23 A. No, of course not. He wouldn't have been
24 spending six hours on those.

25 Q. I'm sorry. Dr. Longo?

1 A. Of course not, in the same day he would not be
2 spending six hours on the sample.

3 Q. Even if he spent on the low end of your
4 estimation there, Dr. Longo, as it relates to the
5 inconsistencies of Mr. Poye's lab, even if what
6 Mr. Hess did on December 13th was spend only two hours
7 a sample, he would have worked 26 hours on
8 December 13, 2018?

9 A. If each sample took two hours, that is correct.

10 Q. And that's your working estimation how long
11 these samples would take and understanding why you and
12 Mr. Poye have reached different conclusions. Correct?

13 A. This is one of the factors that my analysts we
14 keep track at times. It's the lens, it's the camera,
15 et cetera. But they do get samples they spend a long
16 period on.

17 Q. We know even on just the very next day,
18 December 14th, Mr. Hess was real busy again; wasn't
19 he? It looks like Mr. Hess again analyzed 13 or 14
20 samples the very next day?

21 A. That is correct.

22 Q. And there are other days contained in the
23 documents you produced where you can put together the
24 amount of time that any of your individual analysts
25 spent on these PLM samples. Right?

1 A. That is correct.

2 Q. And the truth is, Dr. Longo, you have not done
3 an analysis of how much time each of -- how much time
4 Mr. Hess could have spent on any individual PLM
5 sample, particularly the ones that were sent to
6 Mr. Poye. Is that right?

7 A. Not to this degree, no. This is going from what
8 the manager and the analyst said.

9 Q. And you have not, as it relates to the samples
10 that your shop determined were positive and Mr. Poye's
11 shop determined were negative, you have not done an
12 analysis of whether or not the lens that you have on
13 your microscope in any way affected those results.
14 Correct?

15 A. No, that's not true. It does affect those
16 results because that lens gives you much higher
17 resolution to be able to see the single fibers inside
18 the bundles which is the primary determination if it
19 is asbestiform or greater than 20-to-1. It absolutely
20 does.

21 Q. But what you have not done, Dr. Longo, you have
22 not tried to determine whether amphibole particles can
23 be identified by ISO PLM without using the special HD
24 lens or equipment that you just mentioned. Correct?

25 A. We have used the old lens in the past, but it

1 gives you higher resolution. It absolutely helps.

2 Q. And you testified you don't know if it makes a
3 difference. Do you remember that?

4 A. I don't remember quite that, but it absolutely
5 makes a difference. The ability to see those single
6 fibers in those bundles to distinguish it for 20-to-1
7 or greater, it absolutely does in conjunction with the
8 high resolution camera, in conjunction with the high
9 resolution monitor.

10 Q. What you testified to, Dr. Longo, in March of
11 2019 is that you have not tried to figure out whether
12 there would be a difference in the analysis if the HD
13 lens was used or if it was not used. Correct?

14 A. That is correct, in March.

15 Q. And you have not gone back to all of the count
16 sheets to try and figure out if there would be a
17 difference between the time your analyst spent and the
18 time the analysts in Mr. Poye's shop spent. True?

19 A. That is true.

20 Q. And you have not, as of this date, sent those
21 samples out for a round robin blind sampling to figure
22 out why your shop found eight suspected detects and
23 Mr. Poye's shop found none?

24 A. I have looked into that. I think a better
25 avenue here is to get the analysts together. It is

1 not clear who we send out to round robins. Most all
2 the labs are not doing it to this degree, but we'll
3 get there at some point where we get the two analysts
4 together so they could sit down at the microscopes
5 together and work out why one saw positive on eight
6 samples by ISO and one has not.

7 THE COURT: How long has it been since you
8 were aware there was a difference in what the labs
9 found?

10 THE WITNESS: When we put this report
11 together.

12 THE COURT: Which was?

13 THE WITNESS: The MDL report.

14 THE COURT: The date?

15 THE WITNESS: I think the first one we issued
16 was in November or January.

17 Q. Do you recall the analysis from Mr. Poye as
18 contained in your own report was made available to you
19 in July of 2018? Correct?

20 A. Correct.

21 THE COURT: The reason for my question is some
22 point we'll get together. It has been a year. You
23 haven't done it. You don't have an answer as to the
24 differences because you haven't had that sitdown.

25 THE WITNESS: I have an answer because of the

1 optics, because of the high definition camera, and Lee
2 Poye's lab does not have that. To actually sit the
3 analysts down, we have not done that.

4 THE COURT: But that has not been done.
5 Correct?

6 THE WITNESS: No, that has not been done.

7 THE COURT: Thank you.

8 MS. BROWN: I have no further questions.
9 Thank you.

10

11 REDIRECT EXAMINATION

12 BY MR. BLOCK:

13 Q. Dr. Longo, I want to try to be more specific
14 about the last 20 minutes or so questioning regarding
15 Lee Poye, the microscopists in his lab J-3, and what
16 tests you were talking about with Johnson & Johnson's
17 lawyer. Okay?

18 A. Yes.

19 Q. Now, with respect to what was being referred to
20 as ISO PLM, was that testing involving polarized light
21 microscopy without heavy liquid separation?

22 A. Correct.

23 Q. So polarized light microscopy without heavy
24 liquid separation. In those questions and answers we
25 just heard when Johnson & Johnson's lawyers were

1 referring to ISO PLM, was that referring to polarized
2 light microscopy without heavy liquid separation?

3 A. Yes.

4 Q. Is doing polarized light microscopy without
5 doing heavy liquid separation a sensitive method for
6 detecting asbestos in talc?

7 A. No, it is not as sensitive, when you use the
8 heavy liquid separation.

9 Q. Why is that?

10 A. Because it is just like the TEM analysis you are
11 concentrating the heavy amphiboles. So you are
12 removing all the talc. It is essentially the Blount
13 method published in 1991.

14 Q. And when J-3 Lab did the polarized light
15 microscopy without first doing the heavy liquid
16 separation, it was called ISO PLM. In the
17 questioning, the J-3 lab did not detect asbestos. It
18 was not detected?

19 A. That's correct.

20 Q. Whereas, your lab for that specific analysis,
21 polarized light microscopy without heavy liquid
22 separation, found asbestos in what percentage of the
23 samples approximately?

24 A. 30 percent.

25 Q. So J-3 versus MAS, 30 percent.

1 Now, could we go to the ELMO, please.

2 So the discussion regarding the discrepancies
3 in the ISO PLM that was being discussed in the last 20
4 or so minutes of your cross-examination related to PLM
5 without heavy liquid separation. Is that true?

6 A. That is true.

7 Q. Let's look at what ISO says about what type of
8 microscope should be used if heavy liquid separation
9 is not used. Are we looking at that chart in 2262
10 that we mentioned earlier?

11 A. Yes, we are.

12 Q. Let's read it closely. It says:

13 "For amphibole either centrifugation and heavy
14 liquid followed by evaluation of the centrifuge by
15 microscopy."

16 Do you see that?

17 A. Yes.

18 Q. If you do heavy liquid, before you analyze under
19 the microscope, does it say you can use the PLM
20 microscope, the TEM microscope, or an SEM microscope?

21 A. Correct.

22 Q. Then it says:

23 "Or preparation of TEM specimens from the
24 untreated material is the optimum procedure followed
25 by X-ray diffraction using the mass counting

1 procedures."

2 Do you see that?

3 A. I do.

4 Q. Does ISO 22262 specifically say here it's not an
5 optimum procedure to use polarized light microscopy
6 without first doing heavy liquid separation?

7 A. That is correct.

8 Q. So all of the questions and answers about the
9 inconsistencies between your lab and J-3 regarding
10 so-called ISO PLM had to do with PLM that was done
11 without first doing heavy liquid separation. Is that
12 correct?

13 A. That is correct.

14 Q. Now, J-3 -- and that is not viewed as an optimum
15 procedure by ISO. Correct?

16 A. That's what it states, yes.

17 Q. Would you expect your lab or any lab to be
18 effective in detecting asbestos in talc using that
19 method in terms of detecting it at the same rate it
20 would detect it if it first used heavy liquid
21 separation?

22 A. No. The heavy liquid separation increases the
23 sensitivity and increases the ability to see at lower
24 concentrations.

25 THE COURT: Didn't you direct them to only do

1 this? You told them what to do, and this was the only
2 testing. You never suggested to them that they do the
3 heavy liquid. Correct? So you dictated the way it
4 would be done. Wasn't that your testimony? Did I
5 mishear?

6 THE WITNESS: To J-3?

7 THE COURT: Yes.

8 THE WITNESS: I told them to do the ISO PLM
9 method. I didn't tell them to do the heavy liquid
10 density.

11 THE COURT: Exactly.

12 MR. BLOCK: I want to follow up on that, your
13 Honor.

14 BY MR. BLOCK:

15 Q. Was the purpose of that to compare the
16 effectiveness of using polarized light microscopy to
17 detect asbestos in J&J's talc with and without heavy
18 liquid separation?

19 THE COURT: You could have done that in-house
20 -- I'm sorry. He said he sent it out to J-3 to
21 confirm results and get an independent lab looking at
22 them. And then you will think to replicate the same
23 test, not to say how it would be different if we don't
24 do this. That would be in-house. Didn't you say you
25 sent it out for confirmation? Wasn't that your

1 purpose?

2 THE WITNESS: I sent it out for doing ISO PLM.
3 Mainly, I sent it out for XRD, which we don't do
4 in-house.

5 BY MR. BLOCK:

6 Q. Is XRD a sensitive method for detecting asbestos
7 in cosmetic talc?

8 A. It cannot detect asbestos in cosmetic talc. It
9 can only detect that there is a mineral present that
10 is either tremolite anthophyllite or chrysotile but
11 only at very high concentrations as compared to the
12 other methods.

13 Q. Let me show you what will be Plaintiffs'
14 Exhibit 4, which is a document from appendix A of your
15 reliance materials at No. 18.

16 MR. BLOCK: We'll call this Exhibit 4.

17 Q. Dr. Longo, are you familiar with Plaintiffs'
18 Exhibit 4?

19 A. Yes, sir, I am.

20 Q. What is it?

21 A. That's called the stimuli to the revision
22 process, and it is to revise the USP talc method that
23 currently is what is used, as stated by the FDA, to
24 determine if there was asbestos in cosmetic talc.

25 Q. Was this document done in response to a request

1 from the U.S. FDA to look at modernizing the USP talc
2 monograph?

3 A. Correct.

4 Q. And Johnson & Johnson said that you don't use
5 the USP method when you test for talc. Do you recall
6 that?

7 A. I do recall it.

8 Q. Does this document identify the deficiencies in
9 the USP talc method?

10 A. Yes, sir, it does.

11 Q. And under the USP talc method, if we look at
12 what the document says, it says:

13 "This underscores the need to modernize the
14 current monograph for two reasons."

15 What is the IR and XRD method which is this
16 USP monograph testing method?"

17 A. It stands for infrared analysis, which is not
18 accepted by any government agency -- EPA, OSHA,
19 et cetera -- to determine asbestos in bulk samples.
20 And X-ray diffraction.

21 Q. So under this USP talc method, if the talc is
22 tested according to this method, is IR or XRD the
23 method that is used?

24 A. Yes.

25 Q. And if the test comes up as nondetected, is the

1 test over? Is that it?

2 A. Yes, it is.

3 Q. Here it says that both the IRD and XRD have
4 relatively high detection limits for asbestos. Do you
5 see that?

6 A. Yes.

7 Q. Is that why you have not used that method to
8 test Johnson & Johnson's talc for asbestos?

9 A. Well, we did use XRD, just to see how it
10 compared to the polarized light microscopy, the heavy
11 liquid separation, and TEM; and for all the samples
12 where XRD was run in the MDL, for Italian and Vermont
13 they were all negative.

14 Q. Is that what you will expect based upon your
15 review of the published literature, based upon your
16 review of this stimuli document from 2004, and based
17 upon the detection limits of the IR and XRD, that
18 makes up the USP, is that what you will expect under
19 the USP XRD method, that you would not detect asbestos
20 in cosmetic talc?

21 A. It has to be a very high concentration of
22 asbestos to be in the cosmetic talc by XRD to be
23 positive. The modern day equipment can get down to
24 about .2, .1 percent. That's about it for XRD. So I
25 would not recommend the use of it at all. And then if

1 it is positive, you have to go and do polarized light
2 microscopy. So why not, if you are going to use
3 polarized light microscopy and TEM, why not just start
4 off with that.

5 Q. So in terms of your work and the work of the J-3
6 lab, did both labs look at Johnson & Johnson's talc
7 samples using TEM with heavy liquid separation?

8 A. Yes.

9 Q. Is that one of the methods that is considered an
10 optimum method under the ISO 22262 that we looked at?

11 A. Yes.

12 Q. Can you describe the level of consistency in
13 terms of the results when MAS looked at Johnson &
14 Johnson's talc products with one of the optimum
15 methods TEM with heavy liquid separation and when J-3
16 used that same methodology?

17 A. Yes.

18 Q. What was the level of consistency? Can you
19 generally summarize it?

20 A. We had about the same percentages of positives.
21 In the 68, 69, to 70 percent range.

22 Q. And we looked at earlier that when J-3 looked at
23 22 asbestos structures from MAS, they verified 22 --
24 verified 20. Correct?

25 A. They verified 20, and they verified the amount

1 of bundles percentage-wise that we found.

2 Q. Is that greater than 90 percent in terms of the
3 verification of the asbestos structures that MAS
4 found?

5 A. Yes.

6 Q. Then MAS verified asbestos in 9 out of the 11
7 samples that J-3 found asbestos in. Is that correct?

8 A. That is correct.

9 Q. And one of them the grid opening was blown out.
10 Is that correct?

11 A. That is correct.

12 Q. And is that something that can happen or that's
13 a common problem if multiple labs are looking at grid
14 openings?

15 A. That is correct.

16 Q. So when the optimum method was used, one that is
17 recommended by ISO as having better sensitivity, were
18 the results between MAS and J-3 consistent in terms of
19 the asbestos in Johnson & Johnson's talc?

20 A. Yes.

21 Q. And would you recommend, Dr. Longo, the use of
22 polarized light microscopy without heavy liquid
23 separation based upon the testing that your lab did
24 and the testing the J-3 lab did?

25 A. No. I actually think you have to do -- you have

1 to get the equipment -- you have to get, I believe,
2 the right objective lenses. But I believe you should
3 do all three because you are looking for a needle in a
4 haystack, and, also, if you have just chrysotile
5 asbestos at a high enough concentration, you may be
6 able to see it by PLM without heavy liquid density. I
7 think the best characterization of these samples is
8 ISO 22262-1 PLM, the heavy density liquid PLM and TEM.
9 XRD I don't see any utility in.

10 Q. Does the use of heavy liquid separation prior to
11 analysis by the polarized light microscope or the TEM
12 microscope produce the most sensitive and reliable
13 analysis for detecting asbestos in talc?

14 A. Yes, it does.

15 Q. Would that be the method that's recommended by
16 ISO, and that's consistent with Dr. Blount's published
17 peer-reviewed study?

18 A. That is correct.

19 THE COURT: Go back to my question, because
20 you really haven't answered it. I'm still at a loss
21 why you even sent these samples to J-3, particularly
22 when you just said without the heavy liquid
23 separation, unless there is heavy concentration of the
24 asbestos, you are not going to see it without the
25 separation.

1 You already knew from your testing you were
2 having trace evidence. You knew they weren't going to
3 get anything. What was the purpose sending it to this
4 lab? I don't understand you haven't answered it.

5 THE WITNESS: We are going to publish this,
6 and I think it is good to compare all the different
7 methods.

8 THE COURT: You could have used that method in
9 your own lab to determine that. You said you did this
10 for purposes of some confirmation of an independent
11 lab doing it. This independent lab did nothing to add
12 to the inquiry. I think you are changing why you are
13 saying you are doing it.

14 THE WITNESS: We sent these samples off to
15 have XRD.

16 THE COURT: Not these samples, the earlier
17 samples were not the latest ones. You sent earlier
18 ones out, not these.

19 Q. Dr. Longo, the samples that were sent to J --

20 A. Was in July.

21 THE COURT: Looking at the testimony, I got
22 there were some other earlier samples. Were these
23 later samples sent for XRD?

24 THE WITNESS: Yes.

25 MS. BROWN: All of the MDL samples were sent

1 to J-3 for XRD. They were all nondetect. There was a
2 subset that were also sent for ISO PLM --

3 THE WITNESS: No. That's not correct.

4 Q. Dr. Longo, what is your understanding of that?

5 MR. BLOCK: Your Honor, we can supplement once
6 we've all looked into that issue.

7 THE COURT: I would like to get his answers
8 today. He's given a report. He's been deposed. He
9 is here today. Now is his day for him to tell the
10 story.

11 MR. BLOCK:

12 Q. Dr. Longo, what is your understanding in terms
13 of the samples that were sent to J-3 for PLM analysis?
14 Is it your understanding those were MDL samples?

15 A. There were 79 MDL samples before we even chose
16 which ones we were going to do for TEM. We had the
17 initial batch of 79. I sent them all to J-3 and said
18 do XRD and do ISO 22262. We had not started doing the
19 ISO because you see all our analyses in December.

20 The next 22 were ones that came in but we only
21 sent them for XRD. Then there was another set of two
22 samples we only sent for XRD since we were doing the
23 other analysis in-house. The XRD is what we don't
24 have. So we didn't send them out again after we
25 analyzed ourselves on additional samples.

1 MS. BROWN: If it is helpful to the Court,
2 Dr. Longo's report from February 1st, 2019, at page 49
3 of 56 gives the results of the J-3 XRD and PLM
4 analysis.

5 THE COURT: I only have the January 1st on the
6 bench.

7 MS. BROWN: It is our Exhibit D-1, and that
8 would be in the exhibit binder from my exam.

9 (Pause.)

10 THE COURT: Go ahead.

11 Q. Dr. Longo, I want to get back to the methods
12 that your lab used and some of the questions that you
13 were asked about the published methods. Okay?

14 A. Okay.

15 Q. Let's look at, if we can, look at the ELMO.

16 Dr. Longo, we looked earlier at the three
17 steps to do the TEM analysis to determine if there is
18 asbestos present. Do you recall that?

19 A. Yes.

20 Q. And the three steps we outlined earlier were the
21 morphology, and we have the morphology listed here of
22 greater than 5-to-1 aspect ratio or equal to, greater,
23 or equal to 0.5 microns in length and substantially
24 parallel sides. Do you recall that?

25 A. Yes, sir.

1 Q. And when we went through the EDXA part, the
2 standard methods for identifying asbestos in talc, you
3 told us about determining the mineral chemistry and
4 comparing the EDXA spectra with a reference standard.
5 Do you recall that?

6 A. Yes.

7 Q. You told us earlier about the third step being
8 SAED looking at the crystalline structure, comparing
9 the SAED pattern with reference standards, making the
10 determination of asbestos based upon those three
11 steps. Do you recall that?

12 A. Yes, sir.

13 Q. Now, on cross-examination you were asked about
14 whether you determine how the asbestos grew or how the
15 asbestos formed in nature, the growth habit.

16 Is there anything in the standard three-step
17 TEM method that has a test method to determine the
18 growth habit or calls for the determination of the
19 growth habit?

20 A. No. As a mineralogist or a materials scientist,
21 you can say it grew in a crystalline habit; and if it
22 is fibrous, like asbestos, you could say it is
23 fibrous, and then meets the definition. There is no
24 way to trace back to a growth habit and say this came
25 from that growth habit.

1 Q. When you published in the peer-reviewed
2 literature studies identifying asbestos, did you ever
3 hear back from the peer reviewers that you missed a
4 step, that you failed to determine the growth habit?

5 A. No.

6 Q. Is there anything in the three-step TEM test
7 methods set forth in ISO, set forth in EPA AHERA, set
8 forth in ASTM 5755 -- you asked about the tensile
9 strength. Is there even a test for that in the
10 generally-accepted methods for TEM microscopy?

11 A. No, it's impossible. It's something that cannot
12 be done.

13 Q. Same thing for flexibility. You were asked, Dr.
14 Longo, Didn't you determine the flexibility of the
15 asbestos to make sure it was asbestiform? Is there
16 anything in the generally-accepted three step TEM test
17 methodology that calls for determination of the
18 flexibility of the asbestos structure that is found?

19 A. In TEM analysis you cannot manipulate a
20 microscopic fiber. It is impossible. It is
21 impossible to determine the tensile strength in TEM or
22 even an optical microscope, and they don't even tell
23 you what high tensile strength means, how high, how
24 low.

25 Q. You were asked whether you counted particles

1 that were less than a 5-to-1 aspect ratio and why you
2 didn't do that. Do the generally-recognized test
3 methods require you to count the particles as asbestos
4 that meet the morphology requirement, that meet the
5 EDXA requirement, and meet the SAED requirement?

6 A. No. You are only required to count them that
7 are greater than, equal to 5-to-1 aspect ratio.

8 Q. When you were asked, Well, Dr. Longo, you did
9 not count particles that were less than a 5-to-1
10 aspect ratio; is that following the method?

11 A. It is not following the method, but extra work
12 in previous not MDL samples, we did count everything
13 greater than or equal to 5-to-1 aspect ratio as well
14 as went back and counted everything less than 5-to-1
15 aspect ratio.

16 Q. But in order to identify an asbestos particle as
17 asbestos, if the three steps in the TEM method are
18 satisfied, the morphology, the EDXA and the SAED is
19 that asbestos under EPA AHERA?

20 A. Yes.

21 Q. When you identified asbestos in Johnson &
22 Johnson's talc applying the generally-accepted
23 requirements by TEM for morphology EDXA and SAED, is
24 that asbestos under EPA AHERA?

25 A. Yes.

1 Q. Is that asbestos under ASTM 5755?

2 A. Yes.

3 Q. Is that asbestos under ISO 22262-2?

4 A. Yes.

5 Q. Is that asbestos under Johnson & Johnson's own
6 TEM method, TM 7024?

7 A. Yes.

8 Q. And you were shown a definition of asbestos, I
9 think from the EPA, but did you also apply the EPA's
10 rules on what is non-asbestos?

11 A. Yes, we did.

12 Q. Is any of the asbestos that you identified in
13 J&J's talc non-asbestos, meaning, quote, incomplete or
14 unobtainable electron diffraction patterns, a
15 non-asbestos EDXA or a non-asbestos morphology, did
16 any of the asbestos you identified in Johnson &
17 Johnson's talc qualify as non-asbestos based on the
18 EPA AHERA generally-accepted test method?

19 A. No.

20 Q. You were asked about your lab analysts. And
21 were the lab analysts at MAS required to follow the
22 generally-accepted test methods for TEM and polarized
23 light microscopy that you have described here to the
24 Court?

25 A. Yes.

1 Q. And is one of the ways that you are able to rely
2 upon the work of your lab analysts the training they
3 received, as you described earlier?

4 A. Correct.

5 Q. Is another way to determine the reliability of
6 the work of your analysts the supervision they get at
7 MAS?

8 A. Correct, the quality control, the co-efficient
9 variation for error rates, the continuous look in
10 seeing how they do.

11 Q. Dr. Longo, when you submitted this report for
12 the MDL with your name on it, what did you do to
13 assure that the data was reliable in terms of all the
14 backup data, all the count sheets, all the images, and
15 all the work done by your trained analysts?

16 A. To go through it and review it, have others
17 review it, have questions, sit down with the analysts.
18 So I've spent a lot of time with it.

19 Q. Are you aware of the work of the RJ Lee Group
20 who have tested the MDL samples for Johnson & Johnson?

21 A. I am.

22 MS. BROWN: Your Honor, I object to this as
23 not being at issue. There is no report from RJ Lee in
24 this case regarding MDL samples. It is not disclosed.
25 So I don't know what he is talking about.

1 THE COURT: Let's move on.

2 BY MR. BLOCK:

3 Q. You were asked whether the FDA had ever adopted
4 the heavy liquid separation method. Do you recall
5 that?

6 A. I do.

7 Q. Does the FDA even have any test method for the
8 testing of talc that the FDA has adopted?

9 A. No.

10 Q. Is cosmetic talc even a regulated product in the
11 United States?

12 MS. BROWN: Objection. Far beyond his asking
13 to be able to talk about the FDA's regulated authority
14 as it pertains to cosmetic talc.

15 THE COURT: Sustained.

16 BY MR. BLOCK:

17 Q. You were asked whether the heavy liquid
18 separation was adopted by the government. Is there a
19 government test for testing asbestos in talc?

20 A. No.

21 Q. Okay. So when you applied the
22 generally-accepted methods, including EPA AHERA, is
23 that a test method to determine whether there is
24 asbestos present and how much asbestos is present?

25 A. Could you repeat that?

1 Q. Let me withdraw the question.

2 Is ISO 22262-2, which you followed in this
3 case, is that a generally-accepted test method that
4 includes heavy liquid separation?

5 A. Of course. It is an international standard.

6 Q. Is that the only test method specific to talc
7 that has been published that exists?

8 A. Outside of the USP method with the IR and XRD,
9 that is the only method I'm aware of specific for
10 cosmetic talc using the appropriate methods for the
11 detection limits.

12 Q. Let's go back to the USP method. What is USP?

13 A. USP is the -- is essentially the methods that
14 FDA will require for certain types of tests.

15 Q. Okay. So the USP, which consists of the IR
16 method, and we're looking -- let's talk a little more
17 about what this document is.

18 This is entitled "Stimuli to the Revision
19 Process," and this is the document that was written --
20 was this document written by the USP Expert Talc
21 Panel?

22 A. Yes.

23 Q. Is it from 2014?

24 A. Yes.

25 Q. In terms of what is said here about the USP

1 method, next to "X-ray diffraction," it says:

2 "Limit of detection may be too high for public
3 health and regulatory purposes."

4 And you agree that the detectable limits for
5 X-ray diffraction is too high to rely upon for the
6 detection of asbestos and cosmetic talc particularly
7 as compared to using heavy liquid separation and
8 polarized light microscopy or TEM microscopy?

9 A. Yes, I agree.

10 Q. This USP group said as follows:

11 "Detection of asbestos in talc by the
12 instrumental methods outlined above can be enhanced
13 through the concentration of asbestos particles or
14 separation of asbestos from obscuring or confounding
15 particles."

16 Do you see that?

17 A. Yes, sir, I do.

18 Q. Is that what you were explaining to the Court
19 this morning, that the use of a concentration
20 technique, which heavy liquid separation technique is
21 an example, can enhance the sensitivity of the method
22 to allow better detection of asbestos in talc?

23 A. That is correct. There are different types of
24 concentration methods. The heavy liquid separation
25 happens to be one of them.

1 Q. You were asked earlier about the levels of
2 asbestos in talc and whether the levels of asbestos in
3 talc could or could not translate to a potentially
4 hazardous or significant exposure. Do you remember
5 that?

6 A. Yes.

7 Q. It says: Research by the U.S. EPA and others
8 have shown disturbance of matrixes -- for example,
9 soil, vermiculite insulation, containing asbestos
10 concentration identified by the lower detection limits
11 of PLM, well below 1 percent asbestos by weight, the
12 limit historically used by the U.S. EPA to define
13 asbestos-containing material can generate potentially
14 hazardous exposure."

15 Do you see that?

16 A. I do.

17 Q. Let's talk about some questions you were asked
18 about the amount of asbestos by weight and the
19 significance of that.

20 Now, have you published in the peer-reviewed
21 literature on the amount of exposure from the use of
22 products that contain asbestos?

23 A. I have.

24 Q. And when we look at a product like Johnson's
25 Baby Powder, and we look at this example, and we look

1 at the concentrations you have found in the MDL
2 samples, what range are we looking at?

3 I think we looked before at tens of thousands
4 of asbestos structures per gram up to hundreds of
5 thousands?

6 A. The lower limit is approximately seven, eight to
7 thousand, where we are finding one asbestos fiber or
8 one asbestos bundle up to 260,000, or thereabouts.

9 Q. So in this Johnson's Baby Powder material, is
10 this material a material that would be what's called
11 friable by the EPA?

12 A. Yes.

13 Q. What is the significance of that, that you found
14 63,800 asbestos structures per gram of this Johnson's
15 Baby Powder? What's the significance of the fact that
16 this is in a powdery form when it's used either in the
17 vaginal area, or maybe put on a person's chest or
18 under their arms? What is the significance that it's
19 in a powdery form?

20 MS. BROWN: Your Honor, I'm going to object.
21 He was very clear on cross-examination he has not done
22 an exposure study, and he is not giving a health
23 effects opinion. So beyond a calculation he didn't
24 do, this question is asking for an undisclosed
25 opinion.

1 MR. BLOCK: Your Honor, I think it's
2 responsive to cross. I didn't bring out exposure
3 levels.

4 THE COURT: You tried to this morning and we
5 stopped. So let's move on. We're not going down this
6 avenue.

7 BY MR. BLOCK:

8 Q. As a material scientist, Dr. Longo, is there
9 anything holding the asbestos together? Is there
10 anything encapsulating the product that's keeping it
11 from becoming airborne?

12 A. No, there is nothing there. It is a fine
13 powder. It will be able to get up in the air when it
14 is disturbed, and whatever is in that powder.

15 Q. Dr. Longo, in response to the questions on
16 cross-examination regarding your opinions that there
17 would be a significant exposure from the use of
18 Johnson's Baby Powder, have you relied on the peer-
19 reviewed literature in forming your opinions?

20 A. Yes.

21 Q. Have you relied in part on a study by
22 Drs. Gordon and Millette that studied the amount of
23 asbestos released when cosmetic talcum powder is used?

24 A. Yes.

25 Q. And have you also -- and did that test show

1 significant levels of exposure, thousands of times
2 higher than may be present in the background air?

3 MS. BROWN: Objection, your Honor. He was
4 very clear he did not attempt to quantify exposure
5 here, and counsel is reading other people's articles
6 and asking him to agree.

7 MR. BLOCK: She asked what he meant by
8 "significant" in his report.

9 MS. BROWN: And he made clear he has not done
10 a calculation and has not quantified at all.

11 THE COURT: I have that testimony. That's
12 where it ended.

13 BY MR. BLOCK:

14 Q. Just in terms of structures per gram, let me ask
15 you a question about that:

16 Are you aware from Johnson & Johnson's
17 historical documents that Johnson & Johnson determined
18 the --

19 MS. BROWN: Objection. This is again just
20 trying to get in a quantification of exposure opinion
21 he did not give and quite clearly said he has not done
22 in this case.

23 THE COURT: I would like to stick with his
24 methodology and the basis for his opinion.

25 BY MR. BLOCK:

1 Q. Dr. Longo, one of the questions on
2 cross-examination about your methodology is the
3 definition of asbestos. Do you remember that?

4 A. Yes.

5 Q. Are you aware of Johnson & Johnson's definition
6 of asbestos that is contained in the company's
7 specifications that it has outside of Court?

8 A. Yes.

9 Q. And does Johnson & Johnson's definition of
10 asbestos that it uses in its own specifications
11 outside of court say anything about growth habit?

12 A. No.

13 Q. Does it say anything about tensile strength?

14 A. No.

15 Q. Does it say anything about flexibility?

16 A. No.

17 Q. Does it contain the word "asbestiform"?

18 A. Not that I recall. It just says "fibrous."

19 Q. And under Johnson & Johnson's own
20 outside-of-court definition, as contained in their
21 documents, is fibrous tremolite, fibrous
22 anthophyllite, and fibrous actinolite the same types
23 of asbestos you found in Johnson & Johnson's talc
24 defined by Johnson & Johnson as asbestos?

25 MS. BROWN: Objection. If there is a

1 document, if I could see it.

2 MR. BLOCK: Yes, we'll mark this as Exhibit 5.

3 MS. BROWN: Was this on his reliance list?

4 MR. BLOCK: Dr. Longo has been cross-examined
5 about this document.

6 MS. BROWN: It was not on his reliance list
7 here in the MDL. I object now to him speculating
8 about a company document that was -- your Honor
9 already ruled on this document because they put it on
10 the supplemental list and we objected at that time.
11 Your Honor was very clear, if it was not originally
12 disclosed, and we had the opportunity to question
13 Dr. Longo on it, it was not coming in now.

14 MR. BLOCK: Your Honor, this is redirect
15 examination, and Dr. Longo, there was a
16 cross-examination that suggested that Dr. Longo is not
17 using an appropriate scientifically reliable
18 definition of --

19 THE COURT: I don't know that J&J gives the
20 appropriate scientific definition either, so I don't
21 use them as my standard. That's not the basis for it,
22 and that's not what we're going to use that document
23 for, unless you want to suggest they set the standard.
24 I don't think you do.

25 Let's move on.

1 MR. BLOCK: It's a generally-accepted
2 definition in part because the defendant is using it.

3 THE COURT: I don't know in what context, I
4 don't want to get into what context, why it was put in
5 there. This is not like looking at, as you presented
6 it to me, whether it is some standards set by the
7 government or whatever. That's not what it is.

8 We can take anybody's corporate document and
9 say this is how that corporation defines asbestos.
10 This is how it's been defined by John's Manville, or
11 this is how it's been defined by Colgate Palmolive.
12 I'm not going to get into that. That's not setting my
13 standard for today. I think you have given me the
14 things you would like to set the standard.

15 MR. BLOCK: Thank you, your Honor.

16 BY MR. BLOCK:

17 Q. Dr. Longo, let me ask you about another
18 document, if you could go to tab 43 of your notebook.

19 Now, we're looking at tab 43 in Exhibit 1 for
20 Dr. Longo.

21 Dr. Longo, you were cross-examined by Johnson
22 & Johnson's lawyer, and you were asked whether your
23 lab made a determination of how the asbestos that was
24 identified in Johnson & Johnson's talc was formed.

25 Do you remember that?

1 A. Yes, sir.

2 Q. Are you familiar with an EPA document from 2006
3 that discussed whether you need to determine how an
4 asbestos structure was formed in nature or its growth
5 habit in order for that structure to be identified as
6 asbestos under the generally-accepted test methods?

7 MS. BROWN: Your Honor, I have properly
8 identified the document for the record as the EPA
9 Region 9 document and put it on the record where it
10 is, please.

11 Q. Are you also aware it is an EPA Region 9
12 document?

13 A. Yes.

14 Q. At the end of the document it says the document
15 reflects the testing procedures and policies of the
16 EPA as a whole?

17 A. Yes.

18 Q. So looking at this document at page 11 we have a
19 slide. It says, quote:

20 "It is the position of EPA, the U.S. Centers
21 for Disease Control and Prevention, Agency For Toxic
22 Substances and Disease, Registry and National
23 Institute for Occupational Safety and Health, and the
24 American Thoracic Society, among others, that
25 microscopic structures of amphibole and serpentine

1 materials that are asbestiform and meet the size
2 definition of PCM fibers should be counted as asbestos
3 regardless of the manner by which they were formed."

4 Is that what it says?

5 A. Yes, sir, that's what it states.

6 Q. And PCM fibers, does that refer to phase
7 contrast microscopy?

8 A. It does.

9 Q. How is that similar or different to PLM, which
10 you've discussed in your testimony?

11 A. Well, PCM is an optical for fibers. This is for
12 air samples. Polarized light microscopy is for bulk
13 samples. If you want to compare air samples, this
14 3-to-1 aspect ratio is lower than the standard we use
15 which is the AHERA and the other counting methods that
16 it has to be at least a 5-to-1 aspect ratio.

17 Q. Does this statement by EPA in tab 43 of
18 Plaintiffs' Exhibit 1, this document from EPA Region
19 9, dated April 20th, 2006, does this reflect the fact
20 that if you follow the test method, whether it be for
21 TEM or PLM microscopy, and it satisfies the method,
22 that it is properly identified and counted as asbestos
23 regardless of the manner by which the asbestos
24 structure was formed?

25 A. Correct.

1 Q. When you published in the peer-reviewed
2 literature, looking, again, at Tab 12, your article
3 where you analyzed vermiculite and found tremolite
4 asbestos and other types of asbestos, and you applied
5 the EPA AHERA method, did you apply the EPA AHERA
6 method any differently than you did in this case?

7 A. No, sir.

8 Q. So your scientific methodology that was
9 subjected to the peer review process here, where you
10 applied the EPA AHERA method, did it follow the same
11 three-step TEM that you've used in identifying
12 asbestos in Johnson & Johnson's talc?

13 A. Yes.

14 Q. And did you publish in the peer-reviewed
15 literature that even though a material which in this
16 case was vermiculite has concentrations often less
17 than 0.1 percent asbestos, that it can still cause
18 significant exposures that can be in excess of current
19 regulatory exposure limits?

20 A. Yes.

21 Q. You were asked about the OSHA PEL. Are you
22 familiar with the OSHA regulations?

23 A. Yes.

24 Q. Is the OSHA PEL recognized by OSHA as to not be
25 a safe level of exposure of asbestos?

1 A. That's what the preamble says.

2 Q. And if we look back at Plaintiffs' Exhibit 4,
3 which is the USP expert panel, is that what they say
4 when they are talking about talc? In this article it
5 says:

6 "There are currently no established safe
7 levels of asbestos exposure. This underscores the
8 efforts of the talc EP, expert panel, to identify the
9 strategies and methods for reducing the potential for
10 asbestos contamination of talc to the lowest feasible
11 levels."

12 Is that what the USP expert panel concluded in
13 2014?

14 A. That's what it states.

15 Q. Does that same USP expert panel also recommend
16 including additional sample preparation/concentration
17 methods to improve the feasible limits of detection as
18 indicated C section 5.4?

19 A. That's what it states, yes.

20 Q. Do you agree based upon your testing of Johnson
21 & Johnson's talc that a concentration method such as
22 the heavy liquid separation should be used to have the
23 most sensitive method in detecting asbestos in talc
24 including Johnson & Johnson's talc?

25 A. That is correct.

1 Q. And isn't it true that Johnson & Johnson does
2 not use any concentration method or heavy liquid
3 separation method despite the recommendations of the
4 USP expert panel in 2014? Is that true?

5 A. Not that I'm aware of.

6 Q. Have you reviewed Johnson & Johnson's test
7 methods for testing asbestos in talc?

8 A. I have.

9 Q. Have you ever seen any evidence that Johnson &
10 Johnson knowing what the --

11 MS. BROWN: Objection.

12 THE COURT: I was waiting for you to get up.
13 Sustained. I thought you were a little slow
14 on your feet this time.

15 MS. BROWN: I was a little slow. I apologize.
16 Thank you.

17 BY MR. BLOCK:

18 Q. Dr. Longo, you were asked about cleavage
19 fragments. Do you recall that?

20 A. Yes, sir.

21 Q. If the three-step TEM method is met -- is it a
22 cleavage fragment?

23 A. I'm sorry?

24 MS. BROWN: Your Honor, I don't mean to
25 interrupt, but I think we are coming close to an HOUR

1 on the redirect, and I want to object about the length
2 and the breadth and the scope of the redirect.

3 THE COURT: I assume you are finishing now.

4 MR. BLOCK: May I have another 10 minutes?

5 THE COURT: I gave you extra time this morning
6 too. You have taken more than the cross has been.
7 Let's finish up for the day.

8 BY MR. BLOCK:

9 Q. If the TEM three-step method is met as set forth
10 in the generally-accepted methods you described to the
11 Court, is the particle -- whether it be tremolite,
12 anthophyllite, or actinolite -- a cleavage fragment or
13 asbestos?

14 A. It is asbestos.

15 Q. And in terms of a cleavage fragment, the
16 Campbell article that you were asked about from 1977,
17 what does it say is the normal aspect ratio for a
18 cleavage fragment?

19 A. Less than 3-to-1.

20 Q. And did you count any tremolite, actinolite, or
21 anthophyllite that you found in Johnson & Johnson's
22 talc that met that definition of a cleavage fragment
23 that you just stated from the Campbell article in
24 1977?

25 A. No. For what we called regulated asbestos, it

1 all had the standard methodology that is used in TEM
2 labs and by the EPA.

3 Q. Dr. Longo, you were asked whether your lab has
4 met the standard from the NVLAP when it comes to the
5 distinction between fibers and bundles. Do you
6 remember being asked that on the cross?

7 A. Yes.

8 Q. And has your lab been subject to annual audit
9 testing by the NVLAP on the issue of whether your
10 analysts are properly distinguishing between fibers
11 and bundles at a rate of at least 90 percent?

12 MS. BROWN: I object. This is the subject of
13 the report that was added to the supplemental list
14 after his deposition. This was issued in June. This
15 certification was only produced in June, and your
16 Honor ruled it was not an appropriate area of inquiry
17 in this case. I object to the use of the document and
18 this line of questioning.

19 MR. BLOCK: Your Honor, the question is about
20 historical testing by the NVLAPs during the years 2014
21 to 2017. It's not new and it is directly responsive
22 to the cross-examination that suggested that
23 Dr. Longo's lab had not met --

24 THE COURT: I'm going to permit your question,
25 not the document. Don't introduce the document. You

1 can ask the question.

2 BY MR. BLOCK:

3 Q. Dr. Longo, was your lab subjected to NVLAP audit
4 testing on the issues of fibers and bundles?

5 THE COURT: When?

6 Q. And when was that, Dr. Longo?

7 A. Every year.

8 Q. Let's talk about the last five years. Has your
9 lab been subject to that testing during any time in
10 the last five years?

11 A. I reviewed 2017, 2016, 2015, 2014.

12 Q. In that time period between 2014 and 2017, are
13 these the analysts that tested Johnson & Johnson's
14 talc for the presence of asbestos in the MDL?

15 A. Yes. Some of the same analysts in 2017, they
16 are all of the same analysts.

17 Q. For the 2017 testing that was done by the NVLAP,
18 what was the level of consistency in terms of
19 validation of the analysts that tested Johnson &
20 Johnson's talc for asbestos to accurately determine
21 whether the asbestos structure is a fiber or a bundle?

22 A. It was above 95 percent agreement.

23 Q. How about those previous three years, 2016, 2015
24 and 2014?

25 A. They were all above 95 percent agreement.

1 MR. BLOCK: Dr. Longo, thank you very much. I
2 have no further questions.

3 Thank you, your Honor.

4 THE COURT: Okay. We're done for the day.

5 You are excused, Dr. Longo. You may step
6 down.

7 (Witness excused.)

8 (Court adjourned at 4:20 p.m.)

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I N D E X

Proceedings

Page

WITNESSES	Direct	Cross	Redirect	Recross
William Edward Longo				
Mr. Block	440	--	632	--
Ms. Brown	--	540		--

E X H I B I T S

C E R T I F I C A T E

PURSUANT TO TITLE 28, U.S.C., SECTION 753, THE
FOLLOWING TRANSCRIPT IS CERTIFIED TO BE AN ACCURATE
TRANSCRIPTION OF MY STENOGRAPHIC NOTES IN THE
ABOVE-ENTITLED MATTER.

S/Vincent Russoniello
Vincent Russoniello, CCR
Certificate No. 675

\$	470:2, 516:5, 516:6, 526:10, 604:20 100,000 [1] - 477:3 106 [1] - 557:14 11 [8] - 475:4, 528:19, 528:23, 529:2, 557:14, 576:16, 641:6, 661:18 117 [2] - 470:18, 470:21 12 [4] - 475:4, 488:5, 583:8, 663:2 13 [5] - 578:21, 627:14, 627:17, 628:8, 628:19 13.5 [1] - 513:21 1377 [2] - 568:22, 568:24 13794 [4] - 498:14, 498:20, 589:7, 589:18 13th [9] - 626:5, 626:11, 626:17, 627:5, 627:8, 627:12, 627:17, 627:21, 628:6 14 [2] - 581:1, 628:19 14.2.3 [1] - 609:9 14th [1] - 628:18 15 [2] - 473:6, 502:11 159 [1] - 567:11 16 [3] - 528:20, 612:22, 612:24 16-MD-2738(FLW)(LHG [1] - 435:2 163 [1] - 535:1 17 [2] - 464:3, 464:7 1717 [1] - 578:21 18 [2] - 545:25, 637:15 19 [1] - 557:14 19.7-to-1 [1] - 500:7 1967 [2] - 474:5, 474:7 1970s [2] - 479:10, 481:10 1973 [1] - 479:12 1974 [5] - 439:12, 479:13, 480:4, 481:1, 482:8 1977 [2] - 666:16, 666:24 1978 [2] - 499:7, 530:25 1980 [1] - 466:5 1980s [1] - 449:14 1981 [1] - 494:18 1983 [4] - 441:19, 443:12, 444:10, 444:13 1984 [4] - 443:6, 445:6, 494:17, 494:19 1987 [4] - 445:7, 493:17, 494:23, 494:25	1988 [3] - 445:20, 455:13, 542:23 1990 [1] - 451:8 1991 [7] - 439:15, 449:15, 476:9, 478:25, 490:6, 559:22, 633:13 1992 [1] - 572:16 1995 [3] - 451:9, 475:3, 489:9 1997 [1] - 567:8 1999 [1] - 589:7 1:00 [1] - 539:15 1st [3] - 573:15, 645:2, 645:5	668:24 2015 [2] - 668:11, 668:23 2016 [2] - 668:11, 668:23 2017 [10] - 568:21, 593:11, 594:22, 595:5, 606:17, 667:21, 668:11, 668:12, 668:15, 668:17 2018 [19] - 545:24, 588:18, 590:11, 597:22, 598:20, 600:6, 602:4, 606:17, 616:24, 622:1, 626:6, 626:17, 627:6, 627:8, 627:14, 627:18, 627:21, 628:8, 631:19 2019 [9] - 435:4, 495:3, 516:21, 573:15, 578:20, 612:21, 619:11, 630:11, 645:2 20th [2] - 588:18, 662:19 21 [5] - 504:13, 507:6, 508:6, 516:8, 612:22 22 [9] - 496:10, 527:15, 618:5, 618:10, 619:2, 625:7, 640:23, 644:20 22262 [9] - 498:9, 506:12, 528:16, 547:5, 551:19, 634:9, 635:4, 640:10, 644:18 22262-1 [11] - 485:12, 497:17, 506:10, 508:14, 512:12, 549:8, 607:3, 617:25, 619:14, 620:15, 642:8 22262-1-2 [1] - 589:19 22262-2 [20] - 483:16, 483:21, 484:1, 484:9, 484:25, 485:7, 486:8, 498:4, 520:11, 549:9, 580:25, 589:22, 590:23, 592:6, 592:8, 608:10, 608:18, 614:13, 649:3, 652:2 23 [1] - 567:11 24 [1] - 435:4 25th [2] - 568:21, 568:23 26 [2] - 578:20, 628:7 260,000 [1] - 655:8 271 [2] - 612:22, 612:24 28 [2] - 557:13, 671:5 29 [2] - 485:8, 567:8
,			
'60s [1] - 466:10 '70s [1] - 466:10 '89 [2] - 449:14, 455:16 '90 [2] - 449:14, 455:16 '91 [1] - 455:16			
0	2		
0.1 [3] - 492:20, 492:24, 663:17 0.5 [4] - 468:17, 469:6, 497:13, 645:23 000033 [1] - 560:4 00878 [1] - 505:15 0092 [1] - 559:22 05 [1] - 470:9 08608 [1] - 435:7	2 [29] - 448:5, 463:20, 464:1, 465:9, 488:17, 488:18, 488:23, 497:17, 499:15, 500:4, 502:9, 502:19, 502:23, 502:24, 504:18, 505:14, 510:3, 511:3, 514:19, 523:22, 523:23, 545:25, 568:22, 568:24, 596:5, 602:12, 604:16, 617:25, 639:24 2,000 [1] - 542:23 2.81 [2] - 591:4, 591:13 2.85 [3] - 591:6, 591:14, 592:4 20 [15] - 439:9, 497:9, 523:24, 527:14, 527:25, 561:21, 562:4, 566:17, 567:15, 594:1, 612:24, 632:14, 634:3, 640:24, 640:25 20,000 [1] - 446:16 20-to-1 [5] - 532:2, 533:2, 534:7, 629:19, 630:6 2000 [1] - 456:7 2002 [3] - 555:17, 557:13, 558:3 2003 [2] - 474:5, 555:17 2004 [2] - 474:12, 639:16 2006 [4] - 446:3, 446:15, 661:2, 662:19 2007 [1] - 568:23 2008.07 [1] - 453:9 2009 [2] - 553:24, 554:2 2010 [2] - 553:24, 554:2 2014 [9] - 483:8, 483:12, 652:23, 664:13, 665:4, 667:20, 668:11, 668:12,		
1		3	
1 [47] - 468:21, 468:24, 468:25, 469:1, 477:2, 488:6, 488:9, 488:16, 488:19, 495:6, 499:8, 499:10, 499:18, 502:18, 510:3, 534:5, 559:17, 563:18, 566:5, 566:7, 566:8, 566:11, 566:14, 566:22, 566:24, 567:1, 567:15, 568:3, 584:1, 584:3, 584:4, 585:8, 587:5, 587:6, 587:7, 593:25, 594:1, 602:8, 602:9, 602:15, 610:15, 639:24, 654:11, 660:19, 662:18 1.1 [1] - 589:8 1.605 [1] - 530:22 1.8 [1] - 499:25 1/2 [2] - 523:22, 523:23 10 [8] - 475:4, 486:10, 491:6, 561:21, 562:4, 567:11, 596:3, 666:4 10,000 [1] - 596:2 10-to-1 [4] - 497:5, 578:12, 582:2, 594:1 100 [7] - 446:3, 470:1,		3 [22] - 435:5, 465:13,	

488:24, 489:1, 500:4, 502:19, 506:25, 507:4, 507:7, 508:2, 509:22, 510:3, 516:2, 533:10, 533:11, 533:13, 534:11, 572:10, 578:21, 600:13, 602:12 3,000 [1] - 542:23 3-to-1 [13] - 498:5, 498:11, 498:19, 518:11, 519:18, 575:9, 575:16, 575:20, 576:3, 576:6, 576:14, 662:14, 666:19 3.3 [4] - 468:23, 468:24, 560:7, 587:10 30 [8] - 459:7, 462:11, 485:8, 501:9, 537:8, 598:14, 633:24, 633:25 30-to-1 [2] - 577:2, 594:1 3021 [1] - 588:19 31 [1] - 560:14 33 [1] - 548:25 35 [1] - 445:14 35.4 [1] - 499:22 38 [1] - 484:1	511:22 5-to-1 [34] - 468:18, 469:7, 488:10, 495:8, 495:16, 495:21, 495:25, 496:3, 496:12, 496:21, 497:12, 498:8, 498:15, 498:17, 498:21, 500:1, 500:13, 511:23, 519:21, 573:17, 574:19, 578:5, 578:12, 579:1, 582:2, 582:3, 582:5, 645:22, 648:1, 648:7, 648:9, 648:13, 648:14, 662:16 5-to-10 [1] - 505:3 5.4 [1] - 664:18 5.5 [1] - 579:2 50 [4] - 440:1, 602:17, 602:18, 602:19 511 [1] - 578:18 516 [1] - 571:7 52 [1] - 524:23 520 [1] - 593:10 521 [1] - 568:21 53 [1] - 592:17 54 [2] - 533:22, 534:2 54-to-1 [1] - 534:6 540 [1] - 670:9 555 [2] - 567:7, 567:11 56 [2] - 473:5, 645:3 560 [1] - 545:23 561 [1] - 557:13 5755 [14] - 451:2, 453:4, 453:24, 493:8, 497:14, 505:7, 505:20, 510:23, 511:5, 513:7, 522:3, 524:14, 647:8, 649:1 58 [2] - 537:1, 537:2 588-9516 [1] - 435:25	7 7 [1] - 520:11 70 [2] - 550:4, 640:21 7024 [2] - 513:14, 649:6 71 [4] - 473:4, 473:9, 473:10, 529:13 72 [2] - 473:13, 526:2 72.2 [1] - 526:16 75 [4] - 526:8, 543:10, 580:24, 602:25 753 [1] - 671:5 78 [1] - 627:20 79 [3] - 616:24, 644:15, 644:17	614:13, 630:5, 635:23 able [12] - 458:1, 477:8, 501:24, 518:4, 525:9, 548:17, 596:14, 629:17, 642:6, 650:1, 651:13, 656:13 ABOVE [1] - 671:8 ABOVE-ENTITLED [1] - 671:8 absolutely [4] - 629:19, 630:1, 630:4, 630:7 accept [1] - 439:21 accepted [39] - 458:10, 462:2, 464:8, 468:3, 468:8, 468:13, 469:18, 474:22, 475:21, 489:6, 489:24, 491:20, 492:13, 502:25, 516:13, 518:21, 518:25, 520:14, 520:16, 523:15, 524:1, 524:14, 528:8, 530:5, 531:19, 534:22, 535:14, 535:15, 638:18, 647:10, 647:16, 648:22, 649:18, 649:22, 651:22, 652:3, 660:1, 661:6, 666:10 access [2] - 507:18, 512:11 accessory [6] - 472:6, 492:1, 581:8, 585:12, 585:18, 585:21 accordance [1] - 484:8 According [1] - 489:21 according [7] - 458:9, 469:5, 487:14, 566:8, 611:14, 624:12, 638:22 Accreditation [2] - 455:4, 603:8 accreditation [1] - 455:23 accredited [1] - 603:11 accuracy [1] - 613:18 ACCURATE [1] - 671:6 accurately [2] - 524:24, 668:20 achieving [1] - 453:23 acid [1] - 521:25 acoustical [2] - 457:18, 585:21 acquiring [1] - 507:8 act [1] - 544:2 Act [3] - 455:9, 455:13, 583:5
4 4 [11] - 521:14, 545:24, 570:19, 588:19, 596:4, 602:15, 602:24, 637:14, 637:16, 637:18, 664:2 4-to-1 [1] - 518:11 4.6 [1] - 521:13 40 [4] - 566:18, 567:14, 567:16, 593:1 4000-square [1] - 445:25 402 [1] - 435:7 42 [1] - 529:13 43 [5] - 447:5, 564:12, 660:18, 660:19, 662:17 440 [1] - 670:8 45 [1] - 460:3 49 [1] - 645:2 4:20 [1] - 669:8	6 6 [2] - 525:13, 572:24 60 [3] - 501:10, 550:4, 592:12 609 [1] - 435:25 63,800 [1] - 655:14 632 [1] - 670:8 65 [1] - 598:11 666 [1] - 588:17 675 [1] - 671:11 68 [1] - 640:21 69 [1] - 640:21 69757 [1] - 627:9	8 8 [2] - 530:2, 589:7 80 [2] - 571:8, 597:4 83.7 [2] - 526:23, 526:24 879 [1] - 511:4 880 [1] - 511:4 896 [1] - 504:13 899 [1] - 508:5	9 9 [10] - 473:1, 499:13, 500:9, 500:17, 536:21, 588:19, 641:6, 661:9, 661:11, 662:19 9,000 [1] - 530:2 9.2 [2] - 559:25, 587:12 90 [10] - 525:14, 597:2, 598:13, 603:15, 603:18, 603:25, 604:25, 605:2, 641:2, 667:11 91 [1] - 527:16 93 [2] - 545:24, 592:23 94 [1] - 545:25 95 [8] - 521:7, 526:11, 526:13, 526:14, 544:14, 604:21, 668:22, 668:25
5 5 [13] - 511:24, 521:12, 533:2, 533:23, 534:3, 568:22, 568:24, 573:18, 574:19, 578:6, 593:25, 612:21, 659:2 5-micrometers [1] -		A A-2 [2] - 515:17, 515:18 abated [1] - 494:1 Abe [1] - 470:5 aberration [1] - 624:4 aberrations [1] - 620:20 ability [10] - 458:18, 488:22, 509:7, 524:24, 533:18, 614:11, 614:12,	

actinolite [23] - 466:21, 467:14, 467:18, 467:22, 478:1, 484:7, 492:7, 514:13, 519:3, 521:17, 521:21, 522:9, 523:7, 533:16, 570:23, 572:7, 581:3, 585:18, 585:22, 610:15, 658:22, 666:12, 666:20
ACTION [1] - 435:2
actual [7] - 452:17, 493:3, 550:5, 609:1, 609:4, 615:8, 615:14
add [3] - 564:20, 565:21, 643:11
added [5] - 522:15, 555:4, 571:5, 600:10, 667:13
adding [2] - 564:23, 576:6
addition [5] - 483:6, 485:15, 548:17, 572:20, 588:25
additional [7] - 510:14, 564:19, 564:22, 588:2, 620:3, 644:25, 664:16
address [1] - 460:7
adjourned [1] - 669:8
administration [1] - 446:21
adopt [2] - 494:23, 494:24
adopted [11] - 498:25, 547:1, 547:9, 548:23, 550:21, 550:25, 551:13, 551:18, 651:3, 651:8, 651:18
advance [1] - 625:20
advantages [2] - 487:10, 487:12
AE [1] - 602:8
affect [1] - 629:15
affected [1] - 629:13
affecting [1] - 575:12
afield [1] - 472:20
afternoon [4] - 471:6, 540:10, 540:11, 597:14
age [2] - 442:19, 450:14
agencies [4] - 457:11, 458:19, 460:14, 551:13
Agency [6] - 448:19, 448:21, 454:18, 551:9, 582:17, 661:21

agency [8] - 462:1, 547:1, 547:9, 548:22, 550:22, 551:18, 552:22, 638:18
ago [8] - 437:23, 438:15, 549:23, 553:20, 554:18, 554:24, 557:10, 565:13
agree [17] - 480:25, 481:6, 504:25, 532:7, 548:21, 558:16, 568:7, 569:5, 569:8, 584:9, 588:7, 615:23, 620:23, 653:4, 653:9, 657:6, 664:20
agreed [8] - 525:19, 527:25, 587:23, 589:25, 601:15, 602:20, 604:7, 604:8
agreed-upon [1] - 527:25
agreeing [1] - 605:2
agreement [19] - 452:12, 453:18, 453:25, 525:25, 526:2, 526:9, 526:14, 526:16, 526:23, 526:24, 528:1, 602:17, 602:25, 603:6, 603:7, 603:23, 604:25, 668:22, 668:25
agrees [1] - 452:9
ahead [1] - 645:10
AHERA [65] - 455:8, 455:13, 468:14, 469:2, 469:5, 489:21, 489:24, 492:13, 493:13, 493:16, 493:23, 494:9, 494:13, 494:25, 495:2, 495:8, 495:15, 497:3, 503:1, 503:13, 504:4, 504:10, 504:13, 505:20, 506:4, 507:1, 507:3, 507:6, 507:19, 507:23, 508:1, 508:5, 513:7, 517:16, 517:22, 518:12, 518:19, 518:24, 519:5, 524:9, 549:5, 570:10, 570:15, 570:21, 570:25, 571:2, 571:4, 571:7, 571:19, 574:5, 582:24, 583:1, 583:4, 584:3, 586:4, 647:7, 648:19, 648:24, 649:18, 651:22, 662:15, 663:5, 663:10
AHERA's [3] - 570:12,

571:15, 574:2
AIDS [1] - 459:15
AIHA [1] - 455:24
aimed [2] - 583:16, 599:8
Air [2] - 459:8, 459:20
air [18] - 443:5, 443:6, 443:8, 444:20, 445:3, 445:8, 455:7, 461:5, 530:14, 561:16, 564:13, 583:18, 586:18, 586:24, 656:13, 657:2, 662:12, 662:13
airborne [2] - 560:23, 656:11
ALABAMA [1] - 435:11
Alice [2] - 439:14, 476:9
allegation [2] - 460:24, 461:4
alleged [2] - 559:4, 564:14
Allen [1] - 626:18
ALLEN [1] - 435:10
Alli [1] - 437:21
ALLISON [1] - 436:6
allow [8] - 438:10, 468:3, 486:25, 513:9, 534:12, 583:18, 614:6, 653:22
allowed [4] - 477:6, 501:15, 532:6, 543:3
allows [7] - 470:2, 487:12, 487:13, 487:15, 503:1, 507:25, 533:20
alloy [1] - 442:25
almost [8] - 446:3, 470:10, 488:14, 501:9, 501:14, 522:11, 537:9, 590:24
alone [1] - 457:1
Alpharetta [1] - 440:23
alternative [1] - 555:14
Aluminium [1] - 442:24
aluminum [1] - 442:25
ambient [5] - 564:13, 564:19, 564:22, 564:23, 564:24
American [6] - 451:11, 451:13, 456:1, 456:12, 495:11, 661:24
amosite [4] - 521:11, 521:13, 570:22, 572:6
amount [13] - 457:5, 516:6, 516:9, 530:11, 559:15, 563:11, 576:5,

619:14, 628:24, 640:25, 654:18, 654:21, 656:22
amounts [2] - 515:13, 566:25
amphibole [54] - 476:1, 476:23, 477:2, 477:19, 477:21, 477:25, 478:10, 478:16, 481:5, 484:23, 485:9, 492:5, 492:7, 507:12, 507:13, 507:25, 513:18, 513:25, 514:2, 514:6, 521:10, 521:18, 521:19, 529:13, 529:18, 531:7, 531:20, 532:25, 533:1, 533:6, 534:19, 537:2, 560:24, 568:10, 573:2, 573:3, 573:16, 578:3, 578:24, 579:10, 579:11, 579:18, 579:22, 580:4, 589:4, 609:3, 609:7, 609:15, 609:24, 610:11, 629:22, 634:13, 661:25
amphiboles [12] - 466:22, 467:2, 467:4, 478:5, 480:9, 482:22, 485:14, 568:7, 576:25, 581:12, 589:4, 633:11
AN [1] - 671:6
analog [1] - 580:21
analogs [5] - 571:17, 581:11, 581:14, 582:3, 589:13
analyses [6] - 458:7, 500:23, 523:17, 610:24, 614:15, 644:19
analysis [92] - 445:4, 446:20, 447:25, 453:10, 455:17, 456:5, 456:6, 456:13, 456:14, 456:17, 458:12, 460:17, 461:1, 475:11, 475:25, 476:3, 477:9, 477:23, 480:10, 481:4, 487:23, 488:2, 488:21, 489:12, 489:19, 490:21, 492:15, 492:16, 492:18, 494:2, 494:7, 500:21, 501:7, 501:12, 502:14, 503:1, 506:3, 506:4, 507:7, 508:2, 508:17, 512:12, 515:25, 516:25, 517:10, 520:17, 527:7, 529:1, 530:4,

530:16, 530:19, 532:18, 532:20, 546:12, 547:6, 549:9, 551:14, 561:6, 575:12, 576:1, 586:4, 586:8, 586:18, 586:25, 589:15, 589:23, 598:23, 606:11, 606:21, 619:15, 620:24, 624:22, 625:15, 626:9, 626:17, 627:8, 629:3, 629:12, 630:12, 631:17, 633:10, 633:20, 638:17, 642:11, 642:13, 644:13, 644:23, 645:4, 645:17, 647:19
analyst [37] - 500:20, 525:6, 525:7, 526:4, 578:6, 578:8, 579:2, 579:9, 579:12, 579:17, 579:21, 589:16, 590:3, 594:17, 594:22, 595:1, 595:19, 595:21, 595:25, 596:1, 596:3, 596:5, 596:8, 598:25, 599:7, 602:9, 602:15, 602:24, 604:16, 610:22, 616:8, 618:6, 620:20, 624:25, 629:8, 630:17
analysts [75] - 500:22, 500:25, 501:8, 501:22, 502:3, 502:7, 507:20, 524:24, 525:3, 525:9, 525:12, 525:19, 525:25, 526:7, 526:11, 559:15, 560:12, 560:16, 578:2, 578:23, 581:18, 581:22, 582:9, 582:13, 587:2, 587:3, 587:17, 592:17, 592:23, 593:2, 593:12, 593:16, 595:5, 595:11, 597:18, 598:24, 599:11, 600:2, 600:15, 600:19, 600:23, 601:15, 601:19, 601:25, 602:12, 603:6, 603:17, 603:22, 604:4, 604:7, 604:11, 604:20, 610:10, 610:14, 610:17, 623:11, 624:9, 624:21, 628:13, 628:24, 630:18, 630:25, 631:3, 632:3, 649:20, 649:21, 650:2, 650:6, 650:15, 650:17, 667:10, 668:13, 668:15, 668:16, 668:19

analytical [8] - 446:19, 454:17, 459:18, 475:12, 484:11, 485:1, 523:18, 529:24
Analytical [15] - 441:3, 441:10, 445:17, 446:12, 447:6, 454:24, 457:12, 458:19, 462:12, 472:25, 473:4, 474:16, 474:18, 485:5, 503:17
analyze [15] - 443:8, 444:11, 444:20, 447:11, 447:12, 448:4, 458:1, 458:20, 465:24, 477:6, 486:14, 487:5, 589:17, 600:20, 634:18
analyzed [16] - 445:5, 489:9, 505:17, 527:11, 530:12, 545:16, 554:25, 586:9, 586:12, 626:5, 627:9, 627:14, 627:17, 628:19, 644:25, 663:3
analyzing [20] - 443:16, 443:20, 444:25, 449:7, 449:20, 455:6, 460:20, 478:14, 478:15, 479:2, 510:21, 575:5, 578:22, 585:23, 620:4, 620:14, 621:17, 621:20, 627:21
Angeles [1] - 458:24
angle [6] - 509:9, 509:25, 535:23, 535:24, 536:1
angles [1] - 487:3
animation [2] - 477:11, 477:12
annual [2] - 564:12, 667:8
ANSWER [11] - 546:5, 557:18, 557:21, 557:23, 567:20, 569:8, 579:4, 579:7, 588:24, 613:3, 613:7
answer [13] - 546:18, 546:20, 567:19, 578:19, 580:1, 580:6, 580:9, 582:18, 586:11, 610:4, 614:20, 631:23, 631:25
answered [3] - 546:21, 642:20, 643:4
answers [4] - 570:5, 632:24, 635:8, 644:7
Anthony [2] - 500:21, 501:20

anthophyllite [75] - 466:21, 467:15, 467:18, 467:23, 472:9, 478:1, 478:3, 478:6, 499:20, 503:19, 503:22, 503:23, 505:2, 506:1, 506:16, 506:18, 506:20, 508:15, 508:19, 508:21, 508:24, 508:25, 509:15, 509:19, 509:24, 510:1, 510:2, 510:20, 511:9, 511:19, 512:9, 513:2, 513:4, 514:13, 514:17, 519:2, 521:16, 521:22, 522:8, 523:6, 525:23, 526:20, 526:21, 528:19, 528:24, 529:3, 529:4, 530:24, 534:24, 535:19, 536:2, 536:13, 548:7, 548:13, 548:14, 548:16, 548:19, 548:20, 557:7, 557:24, 561:23, 570:23, 572:7, 575:8, 576:5, 597:1, 600:11, 600:20, 601:18, 601:21, 637:10, 658:22, 666:12, 666:21
apologize [2] - 569:11, 665:15
apparatus [1] - 482:16
appear [1] - 614:19
appeared [1] - 510:13
appearing [2] - 509:3, 509:20
appendix [2] - 470:19, 637:14
applications [1] - 542:16
applied [5] - 475:1, 489:25, 651:21, 663:4, 663:10
apply [6] - 498:8, 519:19, 528:16, 585:6, 649:9, 663:5
applying [2] - 498:9, 648:22
appreciate [1] - 539:12
appropriate [10] - 605:8, 606:21, 607:15, 608:21, 610:19, 612:1, 652:10, 659:17, 659:20, 667:16
appropriately [2] - 439:23, 597:14
approved [1] - 551:5
April [3] - 554:15, 567:8,

662:19
area [14] - 444:3, 448:1, 449:23, 481:12, 483:2, 489:1, 505:25, 510:16, 511:25, 530:15, 611:9, 611:10, 655:17, 667:16
areas [3] - 448:2, 459:21, 459:23
argue [1] - 568:16
arguing [1] - 517:6
argument [1] - 534:4
arguments [1] - 504:1
arms [1] - 655:18
ARPS [1] - 435:20
art [2] - 462:22, 463:2
article [9] - 443:7, 476:17, 490:17, 490:20, 492:4, 663:2, 664:4, 666:16, 666:23
articles [3] - 463:14, 575:18, 657:5
asbestiform [73] - 467:7, 467:11, 514:10, 514:12, 522:4, 534:9, 536:23, 560:24, 568:10, 568:11, 568:16, 569:19, 570:6, 570:21, 570:25, 571:3, 571:13, 571:16, 571:20, 572:17, 573:3, 574:9, 574:16, 575:1, 576:24, 577:5, 577:9, 578:3, 578:24, 579:22, 580:4, 580:15, 580:21, 581:11, 581:13, 581:14, 581:21, 581:23, 582:10, 582:12, 582:15, 587:21, 587:22, 588:3, 588:9, 588:10, 588:14, 588:23, 590:1, 590:2, 590:4, 593:21, 593:23, 594:4, 594:8, 594:11, 594:14, 609:2, 609:7, 609:23, 629:19, 647:15, 658:17, 662:1
asbestos [550] - 442:3, 443:3, 443:4, 443:5, 443:9, 443:16, 443:20, 444:5, 444:7, 444:12, 444:20, 444:25, 445:3, 445:14, 447:7, 447:10, 448:1, 448:11, 448:12, 448:13, 448:17, 448:22, 448:24, 448:25, 449:2, 449:3, 449:4, 449:7,

449:20, 449:22, 450:6,
450:7, 450:8, 450:10,
450:13, 450:16, 450:20,
451:15, 452:22, 453:1,
453:6, 453:10, 454:14,
454:19, 454:20, 454:25,
455:3, 455:7, 455:11,
455:12, 456:3, 457:13,
457:17, 457:18, 457:19,
458:2, 458:8, 458:13,
458:20, 459:5, 459:9,
460:17, 460:20, 460:24,
461:5, 462:14, 463:14,
464:5, 465:12, 465:17,
465:19, 465:20, 465:23,
466:11, 466:12, 466:15,
466:18, 466:20, 467:3,
467:6, 467:7, 467:10,
467:13, 467:17, 467:19,
467:24, 468:1, 468:6,
468:7, 469:19, 469:21,
470:3, 470:8, 471:14,
472:5, 472:10, 472:15,
474:17, 475:7, 475:13,
476:1, 476:5, 476:24,
477:20, 477:25, 478:2,
478:10, 478:16, 478:23,
479:2, 479:17, 480:25,
481:5, 483:11, 483:17,
483:22, 484:4, 484:8,
484:12, 484:20, 485:2,
485:10, 485:14, 487:6,
487:11, 487:14, 487:19,
487:23, 488:3, 488:8,
488:10, 488:13, 488:22,
489:4, 489:15, 490:1,
490:13, 490:22, 491:8,
491:13, 491:14, 491:15,
491:22, 491:24, 492:6,
492:7, 492:20, 492:24,
494:1, 494:24, 495:18,
495:24, 496:20, 496:25,
499:21, 500:3, 500:5,
500:11, 502:20, 503:15,
504:7, 504:19, 504:23,
505:12, 505:18, 506:13,
507:13, 507:14, 508:3,
508:15, 508:19, 508:24,
509:1, 509:15, 509:19,
509:24, 510:2, 510:20,
511:9, 511:19, 511:21,
512:9, 512:19, 513:1,
513:9, 513:13, 513:16,
514:6, 514:13, 514:17,

514:22, 514:23, 515:2,
515:14, 515:16, 515:21,
516:14, 516:22, 517:3,
517:10, 517:15, 517:17,
517:23, 517:25, 518:1,
518:6, 518:12, 518:14,
518:18, 518:19, 518:22,
519:2, 519:3, 519:5,
519:18, 519:23, 520:6,
520:7, 520:8, 520:9,
520:21, 520:24, 521:1,
521:5, 521:7, 521:10,
521:15, 521:16, 521:17,
521:18, 521:19, 522:1,
522:3, 522:8, 522:9,
522:13, 522:15, 522:16,
522:24, 523:4, 523:6,
523:7, 523:12, 524:4,
524:9, 524:10, 524:11,
524:17, 524:25, 525:4,
526:17, 526:22, 527:3,
527:10, 527:11, 527:13,
527:14, 527:15, 527:25,
528:2, 528:10, 528:19,
528:23, 528:25, 529:3,
529:4, 529:8, 529:10,
529:13, 529:18, 529:20,
530:3, 530:6, 530:8,
530:11, 531:7, 531:16,
531:20, 531:22, 531:25,
532:14, 532:25, 533:6,
533:8, 533:17, 534:8,
534:19, 534:22, 535:19,
535:24, 536:13, 536:18,
536:21, 536:23, 537:2,
537:19, 539:4, 540:13,
542:5, 543:20, 545:9,
545:14, 545:18, 547:6,
547:24, 547:25, 548:10,
550:20, 551:6, 551:10,
553:5, 554:7, 555:4,
555:15, 555:19, 555:24,
556:3, 556:17, 556:18,
556:24, 557:4, 557:8,
557:20, 558:4, 559:8,
559:12, 559:15, 560:13,
560:16, 560:24, 562:18,
563:11, 564:6, 564:13,
564:25, 565:9, 565:10,
566:5, 566:14, 566:19,
566:23, 567:18, 567:21,
568:2, 568:8, 568:14,
568:18, 569:6, 569:13,
569:15, 569:17, 569:24,

570:16, 570:21, 571:5,
571:11, 571:15, 571:16,
571:20, 572:2, 572:5,
572:6, 572:7, 572:13,
572:16, 572:22, 572:25,
573:2, 573:6, 573:13,
573:19, 574:13, 575:11,
575:13, 577:6, 577:8,
577:13, 577:15, 577:22,
577:23, 577:24, 577:25,
578:7, 579:3, 579:6,
579:7, 580:5, 580:7,
580:14, 581:24, 582:17,
583:10, 583:17, 583:22,
583:25, 584:4, 584:8,
584:10, 584:11, 584:12,
584:14, 585:8, 585:10,
585:20, 586:6, 586:8,
586:13, 586:20, 587:3,
588:1, 588:13, 589:3,
589:13, 594:5, 594:10,
594:11, 598:25, 599:3,
599:6, 599:9, 600:10,
600:11, 600:13, 600:21,
607:20, 609:16, 611:4,
611:9, 613:11, 615:10,
615:14, 615:20, 619:3,
619:7, 621:4, 621:17,
621:21, 633:6, 633:17,
633:22, 635:18, 636:17,
637:6, 637:8, 637:24,
638:19, 639:4, 639:8,
639:19, 639:22, 640:23,
641:3, 641:6, 641:7,
641:19, 642:5, 642:13,
642:24, 645:18, 646:2,
646:10, 646:14, 646:15,
646:22, 647:2, 647:15,
647:18, 648:3, 648:16,
648:17, 648:19, 648:21,
648:24, 649:1, 649:3,
649:5, 649:8, 649:10,
649:12, 649:13, 649:15,
649:16, 649:17, 651:19,
651:24, 653:6, 653:11,
653:13, 653:14, 653:22,
654:2, 654:9, 654:11,
654:13, 654:18, 654:22,
655:4, 655:7, 655:8,
655:14, 656:9, 656:23,
658:3, 658:6, 658:10,
658:23, 658:24, 660:9,
660:23, 661:4, 661:6,
662:2, 662:22, 662:23,

663:4, 663:12, 663:17,
663:25, 664:7, 664:10,
664:23, 665:7, 666:13,
666:14, 666:25, 668:14,
668:20, 668:21
Asbestos [4] - 455:9,
465:14, 490:7, 583:5
asbestos-added [2] -
522:15, 571:5
asbestos-containing
[10] - 458:2, 583:22,
583:25, 584:4, 584:14,
585:8, 585:10, 586:6,
586:13, 654:13
asbestos-testing [1] -
448:13
ASHCRAFT [1] - 435:12
aspect [51] - 468:17,
469:6, 469:9, 469:12,
469:16, 488:9, 493:11,
495:8, 495:16, 495:25,
496:3, 496:12, 496:20,
496:21, 496:25, 497:4,
497:12, 498:4, 498:8,
498:15, 498:17, 498:21,
499:25, 500:6, 500:13,
500:15, 511:23, 518:11,
532:9, 533:2, 534:6,
573:17, 574:19, 575:9,
576:2, 576:14, 577:2,
577:18, 578:4, 579:1,
582:1, 582:4, 645:22,
648:1, 648:7, 648:10,
648:13, 648:15, 662:14,
662:16, 666:17
assessment [1] - 505:6
assisting [1] - 437:17
associated [1] - 472:7
Associates [1] - 466:7
Association [2] - 456:2,
456:12
assorted [2] - 509:2,
509:19
assume [2] - 567:13,
666:3
assumes [2] - 550:24,
551:1
assuming [1] - 495:18
Assurance [1] - 456:25
assurance [1] - 457:7
assure [4] - 494:2,
520:21, 529:19, 650:13
ASTM [26] - 450:2,

451:2, 451:6, 451:10, 451:12, 451:17, 451:18, 452:3, 452:11, 452:20, 453:4, 453:8, 453:24, 493:8, 497:14, 505:7, 505:20, 506:5, 506:6, 510:23, 511:5, 513:7, 522:2, 524:14, 647:8, 649:1 ASTM-5755 [1] - 452:21 at-issue [1] - 538:16 Atlanta [3] - 440:24, 440:25, 446:4 Atlas [3] - 465:21, 467:9, 570:7 atlas [2] - 465:22, 466:3 atoms [2] - 510:7, 510:8 attach [3] - 505:13, 505:16, 510:25 attached [1] - 524:22 attempt [1] - 657:4 attention [2] - 479:6, 581:1 attorney [1] - 543:19 attributes [1] - 523:9 audit [3] - 457:2, 667:8, 668:3 auditor [1] - 455:20 auditors [1] - 457:9 August [1] - 445:6 author [1] - 598:1 authorities [1] - 571:10 Authority [1] - 457:14 authority [1] - 651:13 authorship [2] - 451:5, 493:8 automatically [3] - 569:13, 595:16, 595:18 available [5] - 462:24, 471:1, 554:3, 621:25, 631:18 avenue [3] - 449:25, 630:25, 656:6 average [4] - 469:25, 563:8, 563:23, 564:13 aware [12] - 484:21, 521:21, 551:8, 557:22, 557:23, 631:8, 650:19, 652:9, 657:16, 658:5, 661:11, 665:5 axis [9] - 507:18, 507:21, 509:10, 509:12, 512:13, 512:18, 512:19, 512:23,	513:17 B babies [3] - 556:23, 557:3, 557:20 baby [1] - 472:13 Baby [13] - 472:14, 473:5, 499:7, 531:1, 535:20, 600:9, 600:16, 611:23, 615:21, 654:25, 655:9, 655:15, 656:18 Bachelor's [2] - 441:15, 501:19 background [6] - 441:11, 520:19, 561:21, 561:22, 562:4, 657:2 backup [1] - 650:14 backwards [1] - 571:23 bags [1] - 521:1 Baltimore [1] - 458:22 bar [1] - 499:24 BART [1] - 435:22 based [24] - 480:24, 491:8, 493:3, 512:24, 516:17, 518:8, 518:10, 518:21, 531:19, 549:4, 562:13, 571:24, 585:10, 611:5, 611:22, 613:13, 613:14, 639:14, 639:15, 639:16, 641:23, 646:10, 649:17, 664:20 basic [3] - 482:21, 623:14, 625:14 basis [5] - 502:14, 561:24, 576:20, 657:24, 659:21 batch [1] - 644:17 Bates [1] - 499:15 bathroom [1] - 597:10 BE [1] - 671:6 beam [3] - 510:15, 518:2, 518:3 Beard [3] - 454:16, 454:17, 454:20 Beasley [1] - 626:18 BEASLEY [1] - 435:10 became [2] - 453:13, 494:13 become [2] - 510:13, 625:1 becoming [1] - 656:11 began [2] - 445:18, 449:16	begin [3] - 437:8, 443:3, 444:11 beginning [1] - 591:7 begins [1] - 609:2 behalf [10] - 435:16, 436:7, 436:10, 440:11, 455:8, 461:20, 462:13, 554:10, 555:2, 555:18 behave [1] - 442:5 behind [3] - 444:4, 501:5, 501:16 BEISNER [1] - 435:20 belongs [2] - 507:10, 507:11 below [8] - 504:3, 505:25, 516:20, 529:24, 559:17, 566:11, 582:3, 654:11 bench [1] - 645:6 beside [2] - 457:16, 513:2 best [11] - 442:9, 442:13, 449:25, 458:18, 462:24, 466:1, 475:13, 475:25, 496:19, 582:4, 642:7 better [4] - 443:10, 630:24, 641:17, 653:22 between [26] - 508:18, 508:23, 510:8, 510:18, 528:2, 567:15, 571:2, 571:19, 580:21, 581:13, 589:2, 589:12, 590:1, 593:6, 595:12, 600:23, 603:6, 620:24, 623:18, 624:24, 630:17, 635:9, 641:18, 667:5, 667:10, 668:12 beyond [4] - 481:11, 482:25, 651:12, 655:23 bid [1] - 553:9 BIDDLE [1] - 435:18 big [4] - 445:18, 445:22, 523:12, 543:4 billed [1] - 462:12 binder [6] - 499:15, 545:23, 557:12, 578:18, 612:20, 645:8 biological [1] - 501:20 biologists [1] - 446:24 biomaterials [1] - 442:6 bit [20] - 444:18, 444:23, 445:10, 460:3, 488:14, 534:5, 544:9, 544:11,	547:16, 548:12, 555:1, 558:23, 559:11, 568:1, 573:5, 582:23, 587:16, 601:14, 606:10, 612:17 black [1] - 535:25 blank [1] - 505:25 blanks [1] - 520:18 blind [2] - 525:7, 630:21 Blinkinshop [1] - 545:24 Block [3] - 437:16, 472:21, 670:8 BLOCK [58] - 435:16, 437:15, 438:23, 440:6, 440:16, 460:6, 464:20, 464:23, 465:3, 470:17, 471:11, 472:1, 472:3, 472:23, 481:14, 481:17, 486:7, 499:6, 499:13, 523:25, 536:8, 536:11, 538:5, 538:7, 538:20, 538:22, 539:11, 550:24, 589:5, 597:8, 597:12, 605:3, 632:12, 636:12, 636:14, 637:5, 637:16, 644:5, 644:11, 651:2, 651:16, 656:1, 656:7, 657:7, 657:13, 657:25, 659:2, 659:4, 659:14, 660:1, 660:15, 660:16, 665:17, 666:4, 666:8, 667:19, 668:2, 669:1 block [1] - 459:25 Blount [31] - 439:14, 476:9, 476:17, 476:20, 476:21, 483:6, 484:16, 547:10, 547:14, 547:17, 547:18, 548:1, 548:6, 548:10, 548:23, 549:17, 550:16, 550:17, 551:19, 575:6, 575:18, 582:5, 590:10, 590:25, 591:20, 591:25, 592:5, 592:8, 607:2, 607:7, 633:12 Blount's [3] - 591:9, 591:11, 642:16 blown [1] - 641:9 blue [1] - 535:10 board [1] - 453:18 body [1] - 442:7 book [8] - 490:9, 490:12, 490:18, 499:14, 500:9, 500:16, 502:8, 511:3 Boston [1] - 458:22
--	--	--	---

<p>bottle [5] - 559:22, 561:11, 561:14, 561:16, 600:9</p> <p>bottles [2] - 560:15, 560:17</p> <p>bottom [11] - 442:23, 476:16, 477:20, 477:22, 478:11, 478:15, 480:17, 481:20, 481:25, 482:3, 482:14</p> <p>bought [1] - 600:8</p> <p>bounded [1] - 576:20</p> <p>box [1] - 515:22</p> <p>brakes [1] - 556:17</p> <p>brand [1] - 501:13</p> <p>breadth [2] - 596:11, 666:2</p> <p>break [8] - 485:17, 523:23, 539:13, 577:22, 597:10, 597:14, 605:10, 621:1</p> <p>breathing [1] - 561:17</p> <p>bridge [1] - 442:14</p> <p>brief [4] - 459:6, 486:18, 525:18, 526:21</p> <p>briefing [2] - 524:7, 564:6</p> <p>briefly [3] - 452:2, 487:8, 524:23</p> <p>briefs [1] - 462:6</p> <p>bring [3] - 440:7, 609:5, 656:2</p> <p>bringing [1] - 555:3</p> <p>brings [1] - 480:8</p> <p>brittle [1] - 522:11</p> <p>broad [4] - 448:8, 449:1, 449:4, 538:14</p> <p>broad-ranged [1] - 448:8</p> <p>broader [3] - 447:7, 447:8, 447:10</p> <p>broken [2] - 441:25, 497:24</p> <p>brought [2] - 460:8, 461:14</p> <p>Brown [2] - 437:21, 670:9</p> <p>BROWN [56] - 436:6, 437:8, 437:20, 440:5, 470:14, 470:23, 472:16, 481:8, 482:24, 484:17, 537:23, 538:13, 540:9, 545:20, 545:22, 551:2, 551:4, 552:1, 557:11,</p>	<p>561:25, 562:3, 563:1, 567:6, 568:19, 568:25, 569:2, 578:15, 578:17, 588:15, 588:17, 589:7, 589:9, 597:5, 597:15, 605:7, 606:7, 612:18, 614:23, 632:8, 643:25, 645:1, 645:7, 650:22, 651:12, 655:20, 657:3, 657:9, 657:19, 658:25, 659:3, 659:6, 661:7, 665:11, 665:15, 665:24, 667:12</p> <p>build [2] - 442:14, 501:5</p> <p>building [10] - 449:7, 449:20, 449:21, 450:5, 450:11, 450:14, 450:19, 494:3, 494:4, 585:24</p> <p>buildings [6] - 450:9, 457:25, 459:1, 459:2, 459:4, 494:1</p> <p>bulk [4] - 455:7, 492:16, 638:19, 662:12</p> <p>bullets [1] - 452:5</p> <p>bundle [54] - 488:8, 515:12, 520:7, 520:13, 523:13, 524:2, 524:8, 524:12, 524:19, 525:20, 526:1, 526:6, 526:7, 526:12, 526:18, 526:25, 528:3, 528:9, 532:17, 532:22, 533:17, 533:25, 534:14, 535:2, 536:19, 536:21, 541:8, 541:12, 590:3, 593:17, 593:19, 593:22, 594:9, 594:13, 594:19, 595:1, 595:7, 595:11, 595:13, 595:15, 596:25, 599:4, 601:5, 601:17, 602:10, 602:16, 602:19, 602:24, 603:23, 604:6, 604:16, 604:21, 655:8, 668:21</p> <p>bundles [27] - 526:23, 530:16, 532:2, 532:4, 532:11, 534:13, 573:16, 573:19, 575:24, 577:17, 577:20, 581:25, 592:18, 592:23, 593:2, 594:8, 596:18, 596:21, 597:2, 600:24, 629:18, 630:6, 641:1, 667:5, 667:11, 668:4</p>	<p>burden [1] - 530:16</p> <p>Bureau [1] - 496:19</p> <p>business [1] - 593:20</p> <p>busy [2] - 445:12, 628:18</p> <p>buy [1] - 520:25</p> <p>BY [38] - 435:11, 435:12, 435:14, 435:16, 435:18, 435:20, 435:22, 436:6, 436:9, 440:16, 471:11, 472:3, 472:23, 481:17, 486:7, 536:11, 538:7, 538:22, 540:9, 551:4, 562:3, 563:1, 578:17, 589:9, 597:15, 606:7, 632:12, 636:14, 637:5, 651:2, 651:16, 656:7, 657:13, 657:25, 660:16, 665:17, 666:8, 668:2</p>	<p>647:11, 647:19</p> <p>cans [1] - 442:20</p> <p>Cans [1] - 442:24</p> <p>capable [2] - 520:2, 615:24</p> <p>car [2] - 447:19, 473:11</p> <p>carbon [1] - 529:8</p> <p>Care [1] - 436:10</p> <p>careers [1] - 501:1</p> <p>Carolina [3] - 446:6, 464:14, 565:13</p> <p>case [53] - 439:13, 453:1, 459:14, 459:15, 461:13, 461:15, 461:18, 462:6, 464:9, 464:17, 475:2, 479:8, 480:1, 489:25, 491:9, 491:11, 491:22, 492:2, 492:12, 492:17, 493:14, 496:17, 499:5, 503:18, 504:2, 516:8, 516:16, 532:1, 538:24, 539:2, 545:2, 545:13, 546:4, 552:18, 561:22, 566:4, 566:12, 566:21, 571:11, 572:21, 583:1, 587:17, 604:2, 606:11, 609:12, 610:14, 610:25, 650:24, 652:3, 657:22, 663:6, 663:16, 667:17</p> <p>cases [8] - 454:6, 461:4, 463:21, 464:2, 464:7, 472:10, 507:20, 555:3</p> <p>categories [1] - 600:1</p> <p>categorizes [1] - 503:16</p> <p>category [1] - 471:4</p> <p>caused [1] - 477:8</p> <p>causes [2] - 476:3, 478:9</p> <p>causing [1] - 450:22</p> <p>CCR [2] - 435:24, 671:11</p> <p>CDC [2] - 459:8, 552:7</p> <p>ceiling [5] - 450:12, 450:15, 450:17, 450:21, 457:18</p> <p>ceilings [1] - 450:19</p> <p>cement [7] - 565:17, 565:21, 566:4, 566:13, 566:17, 567:15, 567:20</p> <p>Center [2] - 457:25, 459:11</p> <p>Centers [1] - 661:20</p> <p>centimeter [2] - 530:14, 530:15</p>
			<p>C</p>
			<p>c.c [1] - 563:18</p> <p>cables [1] - 459:23</p> <p>calcium [2] - 516:16, 516:18</p> <p>calculate [2] - 525:24, 530:5</p> <p>calculated [4] - 500:6, 561:8, 562:6, 562:20</p> <p>calculation [5] - 530:12, 563:22, 564:2, 655:23, 657:10</p> <p>calculations [2] - 562:18, 565:1</p> <p>calibration [1] - 611:5</p> <p>California [2] - 446:8, 464:13</p> <p>CALIFORNIA [1] - 435:22</p> <p>camera [12] - 620:16, 621:5, 621:8, 621:11, 621:12, 621:15, 621:16, 624:1, 624:3, 628:14, 630:8, 632:1</p> <p>Campbell [6] - 496:18, 575:6, 575:18, 582:6, 666:16, 666:23</p> <p>Canada [1] - 448:18</p> <p>Cancer [1] - 475:2</p> <p>cannot [16] - 441:6, 469:20, 522:12, 547:18, 548:11, 577:8, 587:20, 588:8, 588:21, 589:2, 589:12, 590:1, 637:8,</p>

<p>centrifugation [2] - 484:24, 634:13</p> <p>centrifuge [11] - 477:16, 478:8, 481:22, 482:9, 482:19, 484:14, 591:2, 591:17, 609:3, 609:8, 634:14</p> <p>century [1] - 487:7</p> <p>ceramics [1] - 442:2</p> <p>certain [12] - 455:17, 455:18, 456:13, 457:4, 458:2, 478:10, 483:13, 487:3, 522:2, 527:3, 535:24, 652:14</p> <p>certainly [2] - 549:3, 574:22</p> <p>certainty [1] - 518:21</p> <p>Certificate [1] - 671:11</p> <p>certification [6] - 455:2, 455:6, 455:10, 455:14, 456:2, 667:15</p> <p>certifications [4] - 447:23, 454:23, 455:1, 456:11</p> <p>CERTIFIED [1] - 671:6</p> <p>certified [3] - 455:24, 456:8, 456:14</p> <p>certify [2] - 456:4, 456:16</p> <p>cetera [3] - 450:21, 628:15, 638:19</p> <p>challenge [2] - 463:23, 465:6</p> <p>chance [1] - 574:21</p> <p>change [7] - 442:5, 450:18, 451:22, 465:2, 511:13, 512:3, 595:25</p> <p>changed [7] - 510:15, 572:16, 591:11, 591:13, 591:16, 591:18</p> <p>changes [1] - 550:18</p> <p>changing [2] - 451:22, 643:12</p> <p>characteristic [1] - 512:5</p> <p>characteristics [3] - 486:25, 531:5, 531:6</p> <p>characterization [3] - 484:18, 504:25, 642:7</p> <p>characterize [2] - 441:24, 444:6</p> <p>characterizing [1] - 517:5</p> <p>charge [1] - 454:17</p> <p>chart [7] - 484:2, 525:17,</p>	<p>526:21, 575:6, 575:7, 604:25, 634:9</p> <p>check [2] - 502:12, 622:20</p> <p>checked [1] - 622:14</p> <p>checklists [1] - 455:18</p> <p>Chemical [1] - 465:13</p> <p>chemical [4] - 456:5, 465:16, 466:12, 521:24</p> <p>chemistry [16] - 441:16, 468:6, 488:20, 488:21, 489:19, 491:1, 503:2, 503:21, 508:20, 508:21, 511:10, 516:17, 517:19, 518:9, 578:12, 646:3</p> <p>chemists [2] - 446:25, 447:1</p> <p>chest [1] - 655:17</p> <p>Chicago [2] - 458:23, 501:1</p> <p>children [2] - 494:3, 563:16</p> <p>Chinese [1] - 474:13</p> <p>chips [2] - 459:18, 459:20</p> <p>choice [1] - 453:14</p> <p>choose [1] - 493:22</p> <p>chose [2] - 494:6, 644:15</p> <p>chosen [2] - 453:15, 618:4</p> <p>chrysotile [20] - 458:3, 470:3, 470:8, 472:10, 478:5, 484:7, 507:11, 521:4, 521:8, 547:18, 547:22, 547:24, 548:13, 548:18, 567:21, 570:22, 572:6, 585:17, 637:10, 642:4</p> <p>cigarettes [2] - 489:9, 489:15</p> <p>Cincinnati [1] - 448:20</p> <p>circle [1] - 466:13</p> <p>circled [3] - 466:11, 488:6, 512:5</p> <p>circuit [1] - 439:18</p> <p>circumstances [1] - 598:7</p> <p>cited [2] - 439:20, 489:21</p> <p>city [3] - 458:21, 458:22</p> <p>CIVIL [1] - 435:2</p> <p>civil [1] - 442:11</p> <p>claim [4] - 559:16, 559:21, 560:3, 587:4</p>	<p>claimed [1] - 559:13</p> <p>claiming [2] - 587:2, 600:16</p> <p>claims [1] - 558:3</p> <p>Claire's [1] - 553:16</p> <p>Claire's [1] - 516:23</p> <p>CLARKSON [1] - 435:7</p> <p>classifications [1] - 507:10</p> <p>classified [1] - 522:11</p> <p>classify [1] - 506:17</p> <p>clean [1] - 583:18</p> <p>clear [14] - 466:6, 473:9, 483:15, 494:15, 528:5, 532:16, 559:1, 577:21, 619:19, 631:1, 655:21, 657:4, 657:9, 659:11</p> <p>clearly [2] - 536:18, 657:21</p> <p>cleavage [29] - 518:15, 559:7, 569:15, 569:16, 569:18, 574:12, 575:9, 575:15, 575:24, 576:17, 576:19, 576:20, 577:18, 578:3, 578:8, 578:9, 578:25, 579:10, 579:11, 579:18, 579:22, 580:4, 582:2, 665:18, 665:22, 666:12, 666:15, 666:18, 666:22</p> <p>cleave [1] - 575:1</p> <p>CLERK [7] - 437:4, 485:18, 486:1, 539:16, 540:3, 605:11, 606:1</p> <p>client [2] - 543:4, 626:17</p> <p>clock [1] - 523:24</p> <p>close [3] - 576:10, 591:6, 665:25</p> <p>closely [2] - 502:2, 634:12</p> <p>closer [2] - 582:7, 595:23</p> <p>closest [1] - 503:15</p> <p>cluster [2] - 524:2, 524:19</p> <p>co [5] - 524:21, 525:11, 597:23, 598:1, 650:8</p> <p>co-author [1] - 598:1</p> <p>co-efficient [4] - 524:21, 525:11, 597:23, 650:8</p> <p>coefficient [3] - 598:19, 599:5, 600:5</p> <p>Colgate [1] - 660:11</p> <p>collaboration [2] -</p>	<p>449:17, 450:25</p> <p>collected [2] - 508:9, 601:9</p> <p>color [1] - 535:21</p> <p>column [3] - 484:13, 484:19, 485:4</p> <p>combination [1] - 624:24</p> <p>combined [1] - 501:9</p> <p>comfortable [1] - 501:6</p> <p>coming [7] - 501:4, 501:16, 541:20, 594:2, 614:7, 659:13, 665:25</p> <p>commentators [1] - 497:2</p> <p>commented [1] - 553:23</p> <p>commerce [1] - 520:25</p> <p>commercial [6] - 521:1, 521:5, 521:9, 521:18, 522:13, 523:8</p> <p>commissioned [2] - 597:21, 598:19</p> <p>Committee [1] - 437:17</p> <p>committee [9] - 435:16, 450:2, 452:11, 453:9, 453:19, 454:1, 493:17, 493:21, 546:15</p> <p>common [4] - 478:2, 478:4, 521:4, 641:13</p> <p>community [2] - 487:25, 496:8</p> <p>commuting [1] - 598:13</p> <p>companies [3] - 447:16, 555:19, 556:16</p> <p>companion [1] - 485:13</p> <p>company [27] - 438:3, 438:11, 441:2, 441:3, 441:9, 443:11, 444:12, 444:14, 444:16, 445:1, 445:2, 445:6, 445:16, 445:17, 445:25, 446:3, 454:9, 462:12, 520:25, 541:14, 542:12, 542:22, 543:8, 553:10, 555:4, 598:9, 659:8</p> <p>company's [1] - 658:6</p> <p>comparable [2] - 506:19, 506:23</p> <p>compare [13] - 451:21, 458:15, 482:4, 487:9, 503:24, 511:18, 575:11, 593:7, 604:14, 619:23, 636:15, 643:6, 662:13</p> <p>Compare [1] - 503:14</p>
---	--	--	--

<p>compared [8] - 525:6, 527:7, 539:6, 575:10, 611:10, 637:11, 639:10, 653:7</p> <p>compares [1] - 615:19</p> <p>comparing [6] - 486:8, 526:22, 531:10, 593:6, 646:4, 646:8</p> <p>comparison [8] - 504:6, 504:15, 504:17, 504:20, 506:24, 508:8, 525:8, 595:3</p> <p>complete [1] - 620:21</p> <p>composites [1] - 442:3</p> <p>compound [3] - 456:14, 605:3, 605:5</p> <p>compounds [4] - 447:14, 447:18, 447:20, 456:16</p> <p>concentrate [2] - 475:25, 480:14</p> <p>concentrating [2] - 477:21, 633:11</p> <p>concentration [21] - 449:22, 479:20, 480:8, 480:9, 480:11, 480:13, 480:14, 480:16, 481:2, 549:15, 559:21, 560:2, 639:21, 642:5, 642:23, 653:13, 653:19, 653:24, 654:10, 664:21, 665:2</p> <p>concentrations [6] - 551:11, 561:15, 635:24, 637:11, 655:1, 663:16</p> <p>concept [2] - 480:23, 484:15</p> <p>concepts [2] - 475:6, 475:8</p> <p>concerned [1] - 583:12</p> <p>concerning [1] - 615:17</p> <p>concerns [1] - 437:25</p> <p>concluded [5] - 527:19, 593:12, 593:16, 595:5, 664:12</p> <p>conclusion [2] - 623:24, 625:5</p> <p>conclusions [1] - 628:12</p> <p>concrete [2] - 442:13, 442:14</p> <p>conditions [1] - 508:10</p> <p>conduct [4] - 527:1, 528:12, 528:22, 530:4</p> <p>conducted [1] - 541:17</p> <p>conducting [2] - 578:24,</p>	<p>579:21</p> <p>confer [1] - 470:20</p> <p>conference [2] - 490:5, 490:11</p> <p>Conference [1] - 454:20</p> <p>confidential [3] - 479:15, 479:25, 482:7</p> <p>confirm [2] - 514:1, 636:21</p> <p>confirmation [2] - 636:25, 643:10</p> <p>conform [2] - 575:2, 577:1</p> <p>confounding [1] - 653:14</p> <p>conjunction [2] - 630:7, 630:8</p> <p>connection [3] - 553:22, 555:7, 613:22</p> <p>consensus [8] - 453:23, 487:24, 493:7, 495:6, 496:7, 497:11, 499:2, 505:8</p> <p>conservative [1] - 499:1</p> <p>considered [3] - 467:23, 612:1, 640:9</p> <p>consisted [1] - 473:5</p> <p>consistency [4] - 525:15, 640:12, 640:18, 668:18</p> <p>consistent [11] - 495:23, 496:6, 499:1, 513:24, 513:25, 514:5, 537:11, 538:10, 539:8, 641:18, 642:16</p> <p>consists [2] - 606:25, 652:15</p> <p>consultant [3] - 439:11, 466:3, 466:6</p> <p>consultants [4] - 479:9, 479:14, 479:16, 538:11</p> <p>consulted [1] - 457:12</p> <p>consulting [1] - 446:8</p> <p>consumer [2] - 561:12, 563:22</p> <p>consumer's [1] - 565:3</p> <p>contacts [1] - 557:16</p> <p>contain [10] - 452:21, 484:7, 491:22, 491:24, 521:8, 529:3, 557:20, 620:7, 654:22, 658:17</p> <p>contained [17] - 438:13, 450:6, 473:23, 492:23, 524:25, 530:7, 565:9,</p>	<p>566:4, 566:13, 566:22, 586:13, 619:10, 625:23, 628:22, 631:18, 658:6, 658:20</p> <p>container [3] - 473:12, 475:19, 594:3</p> <p>containers [5] - 473:6, 473:10, 473:24, 529:20, 550:6</p> <p>containing [11] - 458:2, 583:22, 583:25, 584:4, 584:14, 585:8, 585:10, 586:6, 586:13, 654:9, 654:13</p> <p>contains [3] - 488:3, 520:9, 625:14</p> <p>contaminant [2] - 491:23, 491:25</p> <p>contaminate [1] - 621:21</p> <p>contaminated [2] - 449:20, 450:15</p> <p>contamination [5] - 450:19, 450:22, 520:19, 520:22, 664:10</p> <p>contemplates [1] - 584:3</p> <p>content [1] - 556:4</p> <p>context [9] - 439:6, 555:23, 558:22, 584:23, 610:7, 616:21, 621:21, 660:3, 660:4</p> <p>continuation [1] - 497:25</p> <p>continue [1] - 455:12</p> <p>continued [4] - 435:23, 486:6, 605:13, 606:7</p> <p>Continued [2] - 485:20, 539:18</p> <p>continuous [1] - 650:9</p> <p>contract [1] - 553:6</p> <p>contrast [4] - 443:8, 456:3, 472:12, 662:7</p> <p>contributors [1] - 490:11</p> <p>Control [3] - 456:25, 459:11, 661:21</p> <p>control [3] - 455:18, 457:7, 650:8</p> <p>convene [1] - 493:17</p> <p>convenience [1] - 597:12</p> <p>convenient [1] - 539:14</p> <p>convening [1] - 493:21</p> <p>conversation [3] - 471:6, 623:5, 623:8</p> <p>Cook [1] - 538:24</p> <p>copper [1] - 442:24</p>	<p>copy [1] - 437:23</p> <p>cornerstones [1] - 615:23</p> <p>cornstarch [3] - 472:12, 472:14, 472:19</p> <p>Cornstarch [1] - 472:14</p> <p>corporate [2] - 460:19, 660:8</p> <p>corporation [2] - 461:25, 660:9</p> <p>corporations [1] - 544:10</p> <p>Correct [209] - 461:22, 495:9, 506:10, 527:16, 530:20, 540:14, 540:24, 541:18, 541:22, 541:25, 542:5, 542:11, 542:24, 543:8, 543:10, 543:13, 544:4, 544:7, 546:13, 546:24, 547:2, 547:7, 547:10, 547:14, 547:19, 548:23, 549:2, 549:7, 549:17, 549:20, 549:23, 550:9, 550:13, 550:16, 551:19, 551:23, 552:12, 552:15, 552:20, 553:5, 553:8, 553:20, 553:24, 554:7, 555:5, 555:10, 556:10, 558:20, 559:2, 559:5, 559:17, 560:7, 560:13, 560:16, 561:3, 561:6, 561:12, 563:8, 564:4, 565:4, 567:24, 568:5, 568:11, 568:15, 569:9, 569:13, 569:15, 569:19, 570:7, 570:13, 570:23, 571:3, 571:21, 572:3, 572:8, 572:13, 572:18, 573:3, 573:10, 573:21, 574:3, 574:6, 574:10, 574:13, 576:21, 577:2, 577:6, 577:23, 578:7, 579:14, 580:9, 581:8, 581:15, 583:2, 583:6, 583:13, 583:17, 584:1, 584:14, 586:6, 586:14, 588:10, 589:17, 589:23, 590:4, 590:7, 590:15, 590:19, 590:22, 591:9, 591:12, 591:17, 591:23, 592:2, 592:18, 592:24, 593:4, 593:13, 593:17, 594:14, 594:19,</p>
--	---	---	--

595:1, 595:7, 595:13,
595:20, 596:18, 597:19,
598:1, 598:4, 598:8,
599:1, 599:16, 599:20,
599:24, 600:3, 600:24,
601:3, 601:10, 602:1,
604:7, 606:14, 606:18,
606:22, 607:5, 607:9,
607:23, 608:4, 608:11,
608:23, 610:15, 610:18,
610:22, 610:25, 611:6,
611:11, 611:16, 611:19,
612:3, 612:6, 612:8,
612:15, 613:19, 613:23,
614:2, 614:8, 615:2,
615:7, 615:12, 616:4,
616:8, 616:11, 616:14,
616:17, 616:21, 617:1,
617:4, 617:7, 617:13,
617:16, 617:22, 617:24,
618:7, 618:11, 618:17,
618:21, 618:24, 619:7,
619:12, 620:1, 620:5,
620:14, 621:22, 623:5,
623:8, 623:12, 623:19,
624:21, 625:3, 625:16,
626:6, 626:14, 626:19,
626:24, 628:12, 629:14,
629:24, 631:19, 635:15,
640:24
correct [252] - 461:23,
475:5, 489:22, 489:23,
491:16, 492:15, 499:3,
500:8, 503:4, 506:14,
506:15, 510:22, 522:7,
524:19, 524:20, 528:3,
528:4, 529:4, 530:21,
531:3, 532:18, 537:4,
540:15, 540:20, 541:3,
541:4, 541:9, 541:19,
541:23, 542:1, 542:25,
543:9, 543:11, 544:8,
544:17, 544:22, 545:15,
546:14, 547:3, 547:8,
547:11, 547:15, 548:5,
548:9, 548:20, 548:24,
549:16, 549:18, 549:21,
550:14, 551:20, 552:13,
552:16, 552:21, 553:21,
553:25, 554:8, 554:14,
554:20, 555:6, 555:11,
555:16, 557:25, 559:3,
559:6, 559:10, 559:18,

560:1, 560:5, 560:11,
560:17, 561:1, 563:9,
563:24, 563:25, 565:6,
565:11, 565:19, 566:2,
566:15, 566:20, 568:12,
569:10, 569:14, 569:16,
569:20, 570:14, 570:17,
570:24, 571:1, 571:22,
572:9, 572:14, 573:4,
573:8, 573:22, 573:24,
573:25, 574:4, 576:4,
576:15, 576:22, 577:25,
579:6, 580:18, 580:23,
581:4, 581:5, 581:16,
583:3, 583:7, 583:14,
583:24, 584:2, 584:15,
584:18, 584:22, 585:1,
586:9, 586:10, 586:15,
586:25, 587:6, 587:15,
588:11, 588:23, 588:24,
589:4, 589:13, 589:24,
590:5, 590:8, 590:12,
590:16, 590:20, 591:10,
591:13, 592:19, 592:25,
593:5, 593:14, 593:18,
595:2, 595:8, 595:14,
596:19, 597:20, 597:24,
598:2, 598:5, 598:9,
599:14, 599:17, 600:4,
600:18, 600:21, 600:22,
602:2, 602:7, 602:11,
602:17, 602:22, 606:15,
606:23, 607:2, 607:8,
607:17, 607:24, 608:5,
608:12, 608:18, 608:19,
608:24, 609:13, 610:6,
610:12, 610:13, 610:16,
610:23, 611:1, 611:7,
611:13, 611:17, 611:24,
612:4, 612:9, 613:12,
613:20, 613:24, 614:3,
615:3, 616:5, 616:12,
616:22, 617:2, 617:5,
617:14, 617:23, 617:25,
618:14, 618:15, 618:18,
618:22, 619:4, 619:5,
619:8, 619:13, 620:2,
620:10, 621:23, 622:10,
622:25, 623:6, 623:9,
623:13, 624:15, 624:16,
625:12, 625:17, 626:1,
626:2, 626:7, 626:20,
626:25, 627:16, 628:9,
628:21, 629:1, 630:13,

630:14, 631:20, 632:5,
632:22, 633:19, 634:21,
635:7, 635:12, 635:13,
636:3, 638:3, 641:7,
641:8, 641:10, 641:11,
641:15, 642:18, 644:3,
650:4, 650:8, 653:23,
662:25, 664:25
corrected [1] - 624:4
correctly [3] - 498:14,
501:7, 595:12
corrects [1] - 620:20
corrosion [1] - 442:17
cosmetic [39] - 471:19,
483:19, 484:6, 539:7,
544:19, 545:2, 545:13,
545:17, 551:6, 552:11,
553:4, 553:7, 553:24,
554:6, 554:13, 554:18,
554:25, 555:20, 555:25,
556:7, 556:9, 556:19,
558:3, 589:17, 589:20,
606:21, 607:16, 618:1,
618:3, 637:7, 637:8,
637:24, 639:20, 639:22,
651:10, 651:14, 652:10,
653:6, 656:23
cosmetics [1] - 556:10
Council [1] - 436:10
counsel [11] - 437:22,
505:24, 540:17, 544:10,
544:24, 547:23, 552:2,
570:1, 584:25, 608:8,
657:5
counsel's [3] - 438:13,
484:18, 545:23
count [41] - 500:17,
502:18, 505:13, 505:17,
511:1, 518:6, 518:14,
518:17, 519:18, 532:8,
541:2, 541:12, 575:22,
575:23, 576:1, 576:11,
578:6, 578:9, 578:10,
578:14, 579:2, 579:6,
579:12, 579:17, 579:19,
580:5, 585:25, 599:12,
599:15, 599:18, 599:19,
601:11, 602:5, 625:9,
630:15, 648:3, 648:6,
648:9, 648:12, 650:14,
666:20
counted [8] - 573:18,
577:8, 577:17, 599:4,

647:25, 648:14, 662:2,
662:22
counting [41] - 493:10,
495:10, 495:13, 498:12,
519:20, 525:3, 532:1,
536:22, 549:7, 573:10,
573:20, 573:23, 574:5,
575:2, 577:8, 578:11,
581:19, 582:1, 583:1,
583:15, 584:23, 586:3,
586:16, 586:22, 599:6,
601:11, 603:22, 609:8,
609:11, 609:14, 609:17,
609:21, 609:24, 609:25,
610:1, 610:2, 610:5,
610:18, 610:20, 634:25,
662:15
country [9] - 447:16,
448:18, 459:1, 459:3,
521:13, 543:19, 550:8,
554:12, 590:18
couple [6] - 437:25,
543:16, 549:23, 565:12,
597:10, 613:15
course [13] - 462:11,
462:20, 470:25, 480:22,
501:3, 501:13, 551:12,
570:15, 623:1, 625:18,
627:23, 628:1, 652:5
COURT [94] - 435:1,
435:25, 437:5, 437:13,
439:18, 440:7, 441:5,
444:22, 451:7, 459:25,
460:10, 461:7, 461:12,
464:19, 464:21, 464:25,
471:10, 471:20, 471:23,
472:21, 481:16, 483:3,
484:21, 485:17, 486:2,
499:11, 501:17, 502:4,
523:21, 536:7, 536:10,
538:2, 538:6, 538:18,
539:13, 540:4, 545:21,
546:20, 551:3, 561:18,
562:2, 562:13, 562:22,
562:25, 568:20, 569:1,
573:1, 578:16, 579:20,
582:18, 582:22, 588:16,
591:5, 595:23, 596:22,
597:11, 597:13, 598:12,
605:4, 605:10, 606:2,
610:4, 612:19, 614:17,
631:7, 631:12, 631:14,
631:21, 632:4, 632:7,

<p>635:25, 636:7, 636:11, 636:19, 642:19, 643:8, 643:16, 643:21, 644:7, 645:5, 645:10, 651:1, 651:15, 656:4, 657:11, 657:23, 659:19, 660:3, 665:12, 666:3, 666:5, 667:24, 668:5, 669:4</p> <p>court [12] - 437:3, 464:19, 465:5, 465:6, 513:23, 519:17, 541:20, 542:11, 544:15, 554:15, 658:11, 658:20</p> <p>Court [40] - 437:10, 438:4, 439:6, 441:6, 441:11, 448:15, 449:16, 449:18, 453:4, 454:23, 463:11, 463:20, 465:12, 469:10, 470:18, 475:4, 479:24, 491:6, 492:4, 497:8, 500:9, 500:17, 500:22, 502:18, 504:14, 519:11, 528:17, 531:19, 533:12, 534:11, 535:4, 564:11, 605:8, 645:1, 649:24, 653:18, 658:7, 666:11, 669:8</p> <p>Court's [3] - 524:22, 545:22, 597:12</p> <p>COURTHOUSE [1] - 435:7</p> <p>courtroom [3] - 437:14, 440:8, 441:7</p> <p>courtrooms [1] - 554:11</p> <p>courts [2] - 464:23, 550:7</p> <p>cover [3] - 452:3, 452:7, 454:22</p> <p>covered [2] - 572:12, 611:9</p> <p>covers [1] - 447:4</p> <p>created [3] - 613:23, 613:25, 615:1</p> <p>creating [4] - 452:6, 452:9, 612:14, 615:18</p> <p>creation [1] - 451:5</p> <p>credentials [1] - 552:3</p> <p>criteria [8] - 517:19, 519:20, 531:23, 532:14, 533:22, 534:25, 536:22, 582:1</p> <p>crocidolite [5] - 489:10, 521:11, 521:14, 570:22,</p>	<p>572:6</p> <p>crookedness [1] - 488:15</p> <p>cross [25] - 440:2, 460:9, 483:14, 494:16, 505:24, 507:16, 517:14, 520:19, 535:13, 535:18, 535:21, 535:22, 605:6, 634:4, 646:13, 655:21, 656:2, 656:16, 658:2, 659:4, 659:16, 660:21, 666:6, 667:6, 667:22</p> <p>Cross [1] - 670:6</p> <p>CROSS [2] - 540:8, 606:6</p> <p>cross-contamination [1] - 520:19</p> <p>cross-examination [11] - 483:14, 494:16, 507:16, 517:14, 634:4, 646:13, 655:21, 656:16, 658:2, 659:16, 667:22</p> <p>CROSS-EXAMINATION [2] - 540:8, 606:6</p> <p>cross-examined [2] - 659:4, 660:21</p> <p>cross-examines [1] - 505:24</p> <p>CRR [1] - 435:24</p> <p>crush [4] - 574:8, 574:25, 577:4, 577:10</p> <p>crushed [2] - 569:18, 574:17</p> <p>crushes [1] - 577:10</p> <p>crushing [2] - 576:24, 577:4</p> <p>crystal [5] - 487:2, 510:10, 510:16, 576:20</p> <p>crystalline [8] - 487:16, 489:3, 491:2, 518:10, 531:24, 534:25, 646:8, 646:21</p> <p>cubic [1] - 530:14</p> <p>current [5] - 446:11, 493:1, 623:23, 638:14, 663:18</p> <p>cut [2] - 523:12, 608:14</p> <p>CV [2] - 463:13</p> <p>cylinder [1] - 442:21</p>	<p>D-5755 [3] - 451:2, 451:19, 452:4</p> <p>d-spacing [1] - 507:24</p> <p>D.C [4] - 435:14, 435:20, 436:9, 446:9</p> <p>daily [1] - 502:14</p> <p>damaged [1] - 529:7</p> <p>DANIEL [1] - 435:14</p> <p>data [6] - 531:1, 531:11, 615:17, 615:22, 650:13, 650:14</p> <p>date [4] - 462:25, 463:1, 630:20, 631:14</p> <p>dated [1] - 662:19</p> <p>dates [3] - 625:25, 627:16, 627:19</p> <p>Daubert [6] - 463:22, 464:17, 464:21, 464:24, 465:1, 465:6</p> <p>DAUBERT [1] - 435:4</p> <p>days [4] - 449:24, 542:10, 626:23, 628:22</p> <p>DEA [1] - 448:6</p> <p>deal [1] - 438:2</p> <p>dealing [5] - 470:11, 507:12, 513:5, 565:5, 594:5</p> <p>dealt [1] - 607:23</p> <p>decades [8] - 438:9, 466:4, 466:7, 471:15, 471:17, 474:8, 483:1, 554:7</p> <p>December [15] - 444:10, 545:24, 626:5, 626:11, 626:17, 627:5, 627:8, 627:12, 627:14, 627:17, 627:21, 628:6, 628:8, 628:18, 644:19</p> <p>decide [1] - 584:7</p> <p>decided [3] - 449:25, 495:16, 598:16</p> <p>decision [8] - 471:9, 526:5, 581:22, 582:13, 582:14, 582:19, 596:4, 596:8</p> <p>declined [2] - 543:12, 598:6</p> <p>Defendant [2] - 436:7, 436:10</p> <p>defendant [2] - 461:25, 660:2</p> <p>defendants [1] - 460:19</p> <p>defense [4] - 505:24,</p>	<p>555:13, 555:23, 564:3</p> <p>deficiencies [1] - 638:8</p> <p>define [3] - 468:16, 523:1, 654:12</p> <p>defined [7] - 468:7, 469:5, 498:4, 576:19, 658:24, 660:10, 660:11</p> <p>defines [7] - 570:16, 570:21, 570:25, 572:2, 572:5, 572:25, 660:9</p> <p>definitely [1] - 548:15</p> <p>definition [58] - 468:12, 496:24, 500:2, 511:21, 522:4, 522:15, 522:17, 522:20, 522:22, 534:8, 570:12, 570:18, 571:5, 571:11, 571:14, 572:16, 572:18, 572:22, 573:2, 573:6, 573:10, 574:2, 575:3, 576:17, 577:1, 577:11, 577:15, 577:17, 579:4, 579:12, 579:18, 580:2, 581:19, 581:23, 582:15, 585:3, 589:18, 590:3, 593:22, 594:3, 594:4, 594:10, 594:12, 594:13, 620:18, 621:13, 632:1, 646:23, 649:8, 658:3, 658:5, 658:9, 658:20, 659:18, 659:20, 660:2, 662:2, 666:22</p> <p>definitions [2] - 522:1, 522:14</p> <p>degree [5] - 501:20, 501:25, 518:20, 629:7, 631:2</p> <p>degrees [1] - 447:1</p> <p>demonstrate [1] - 486:24</p> <p>demonstrated [1] - 510:19</p> <p>densities [2] - 609:15, 609:18</p> <p>density [32] - 477:15, 477:16, 477:17, 477:18, 477:19, 477:22, 479:2, 479:4, 479:19, 480:19, 481:24, 540:22, 545:5, 545:8, 545:16, 547:20, 548:3, 548:18, 549:14, 550:19, 551:11, 553:11, 590:24, 591:3, 591:4, 591:14, 592:5, 607:2, 614:14, 636:10, 642:6,</p>
	<p>D</p>		
	<p>D-1 [1] - 645:7</p> <p>D-22 [1] - 453:8</p> <p>D-48 [1] - 612:21</p>		

<p>642:8 department [1] - 443:21 Department [2] - 476:14, 476:18 departure [1] - 598:8 depict [1] - 535:9 depiction [1] - 482:5 depicts [1] - 525:18 deposed [1] - 644:8 deposition [10] - 461:18, 545:24, 557:13, 567:8, 567:9, 612:22, 612:24, 622:7, 623:4, 667:14 depositions [4] - 542:24, 555:9, 598:6, 622:12 DEPUTY [7] - 437:4, 485:18, 486:1, 539:16, 540:3, 605:11, 606:1 describe [2] - 456:19, 640:12 described [14] - 480:7, 482:7, 482:19, 484:15, 502:24, 515:7, 528:17, 560:9, 573:24, 616:2, 649:23, 650:3, 666:10 description [1] - 486:19 designed [4] - 491:23, 525:2, 599:4, 603:21 despite [1] - 665:3 detail [2] - 468:11, 582:23 details [3] - 491:5, 492:5, 495:8 detect [15] - 529:13, 547:18, 547:21, 548:11, 548:13, 560:13, 560:14, 560:18, 619:7, 633:17, 635:20, 636:17, 637:8, 637:9, 639:19 detectable [1] - 653:4 detected [6] - 478:17, 527:3, 529:19, 537:3, 560:16, 633:18 detecting [8] - 520:3, 548:13, 633:6, 635:18, 635:19, 637:6, 642:13, 664:23 detection [9] - 639:4, 639:17, 652:11, 653:2, 653:6, 653:11, 653:22, 654:10, 664:17 detection/sensitivity [1] - 475:9</p>	<p>detects [1] - 630:22 determination [15] - 574:7, 580:14, 582:11, 583:22, 584:13, 585:7, 586:12, 595:10, 595:15, 595:19, 629:18, 646:10, 646:18, 647:17, 660:23 determine [45] - 443:9, 448:25, 449:22, 450:5, 457:19, 457:20, 458:1, 459:4, 468:3, 475:10, 481:4, 487:4, 487:15, 488:3, 488:21, 489:13, 491:6, 491:14, 495:14, 503:2, 507:9, 516:22, 520:8, 531:14, 533:19, 581:20, 584:11, 598:23, 599:2, 603:21, 615:20, 629:22, 637:24, 638:19, 643:9, 645:17, 646:14, 646:17, 647:4, 647:14, 647:21, 650:5, 651:23, 661:3, 668:20 determined [5] - 463:7, 492:24, 629:10, 629:11, 657:17 determining [7] - 489:25, 495:17, 525:4, 526:1, 531:6, 573:11, 646:3 develop [3] - 441:24, 442:18, 449:6 developed [5] - 453:12, 479:12, 493:16, 494:17, 494:18 developing [3] - 449:17, 450:4, 451:1 development [3] - 493:12, 494:8, 494:11 diameter [2] - 469:25, 516:3 dictated [1] - 636:3 differ [1] - 462:3 difference [10] - 528:8, 587:20, 591:3, 622:9, 623:22, 630:3, 630:5, 630:12, 630:17, 631:8 differences [4] - 623:18, 625:2, 625:6, 631:24 different [36] - 453:19, 479:4, 480:23, 481:24, 486:24, 496:24, 498:13, 503:10, 506:22, 509:25, 515:9, 515:10, 515:13,</p>	<p>542:16, 548:12, 549:7, 550:12, 596:4, 607:15, 609:14, 609:18, 609:19, 615:5, 619:15, 619:22, 620:19, 620:25, 622:5, 622:18, 623:24, 624:3, 628:12, 636:23, 643:6, 653:23, 662:9 differently [3] - 567:3, 623:14, 663:6 diffraction [23] - 443:23, 444:2, 444:3, 487:16, 489:2, 507:24, 509:25, 510:7, 510:9, 510:25, 511:12, 511:25, 513:3, 517:20, 518:3, 518:5, 578:13, 616:25, 634:25, 638:20, 649:14, 653:1, 653:5 dimension [1] - 516:2 dimensional [1] - 596:9 dimensions [2] - 488:7, 573:12 Direct [1] - 670:6 DIRECT [2] - 440:15, 486:6 direct [6] - 581:1, 597:8, 603:1, 605:1, 605:5, 635:25 direction [5] - 486:23, 510:6, 510:15, 535:12, 542:14 directions [1] - 542:13 directly [2] - 439:7, 667:21 dirt [1] - 480:18 disadvantages [1] - 487:11 disagree [1] - 592:3 disagreed [1] - 601:15 disagreements [1] - 527:18 disappearing [2] - 509:3, 509:20 disappears [2] - 487:4, 535:24 disclosed [4] - 470:15, 597:6, 650:24, 659:12 discovery [1] - 473:15 discrepancies [1] - 634:2 discriminate [4] - 580:20, 581:13, 589:2,</p>	<p>589:12 discriminator [1] - 496:20 discuss [2] - 495:16, 598:10 discussed [7] - 518:25, 519:11, 522:3, 558:15, 634:3, 661:3, 662:10 discusses [1] - 609:13 discussing [3] - 498:22, 622:25, 624:1 discussion [1] - 634:2 discussions [1] - 524:6 Disease [4] - 459:11, 490:7, 661:21, 661:22 dispersion [2] - 533:17, 621:14 dispersive [2] - 444:3, 488:20 dispute [2] - 564:2, 564:17 distance [1] - 468:21 distinction [4] - 510:18, 571:2, 571:19, 667:5 distinguish [7] - 508:15, 508:18, 511:19, 590:1, 595:12, 600:23, 630:6 distinguishes [3] - 508:23, 510:20, 516:17 distinguishing [2] - 509:15, 667:10 distributed [1] - 516:8 district [3] - 458:23, 458:25 DISTRICT [2] - 435:1, 435:1 disturbance [1] - 654:8 disturbed [1] - 656:14 divide [1] - 469:15 Doctor [10] - 476:9, 541:8, 543:1, 543:16, 543:18, 560:19, 565:7, 571:25, 587:10, 598:3 Doctorate [1] - 441:20 document [39] - 439:22, 452:16, 470:15, 471:3, 471:7, 471:12, 481:11, 483:1, 483:3, 484:18, 553:15, 576:11, 626:10, 637:14, 637:25, 638:8, 638:12, 639:16, 652:17, 652:19, 652:20, 659:1, 659:5, 659:8, 659:9,</p>
--	--	---	---

659:22, 660:8, 660:18,
661:2, 661:8, 661:9,
661:12, 661:14, 661:18,
662:18, 667:17, 667:25
documentation [3] -
515:15, 625:24, 626:13
documents [19] - 438:3,
438:5, 438:9, 438:11,
438:13, 438:16, 438:19,
438:24, 438:25, 439:4,
439:7, 452:20, 455:21,
537:18, 537:25, 628:23,
657:17, 658:21
dollars [2] - 462:15,
463:6
domain [1] - 450:1
done [73] - 438:21,
439:25, 445:8, 445:9,
447:8, 447:15, 451:25,
458:7, 459:8, 459:18,
460:13, 461:1, 461:3,
461:20, 479:15, 480:24,
494:11, 502:9, 516:21,
517:6, 525:7, 538:3,
538:10, 538:15, 539:10,
541:13, 544:12, 552:18,
553:19, 553:24, 556:3,
561:5, 561:13, 562:11,
562:18, 563:3, 563:21,
564:2, 564:16, 564:18,
565:1, 565:7, 576:9,
584:19, 590:7, 597:9,
603:25, 605:9, 613:9,
614:15, 614:25, 617:6,
621:20, 621:21, 629:2,
629:11, 629:21, 631:23,
632:3, 632:4, 632:6,
635:10, 636:4, 636:19,
637:25, 647:12, 650:15,
655:21, 657:9, 657:21,
668:17, 669:4
doors [2] - 443:12,
445:20
dots [2] - 470:4, 510:6
doubled [1] - 537:9
down [22] - 442:1,
442:21, 448:5, 497:23,
497:24, 497:25, 498:1,
513:21, 515:6, 538:20,
595:20, 595:21, 601:8,
604:6, 621:1, 631:4,
632:3, 639:23, 650:17,
656:5, 669:6

dr [2] - 482:17, 548:17
Dr [201] - 437:9, 437:11,
437:14, 437:18, 437:24,
438:4, 438:14, 438:18,
439:1, 439:13, 439:14,
440:8, 440:17, 440:19,
440:22, 444:22, 444:23,
448:9, 454:11, 454:12,
460:7, 460:13, 462:5,
463:10, 465:4, 465:11,
465:25, 470:13, 470:19,
476:17, 476:20, 476:21,
480:6, 481:1, 481:8,
481:18, 482:7, 482:17,
482:25, 483:6, 484:16,
486:8, 490:5, 490:13,
490:14, 490:17, 496:10,
497:18, 499:14, 499:17,
517:15, 519:22, 520:24,
533:12, 533:15, 534:17,
537:17, 538:23, 538:24,
540:10, 540:12, 542:2,
542:18, 544:18, 544:25,
545:10, 546:11, 546:22,
547:18, 549:1, 551:25,
552:2, 552:10, 554:3,
554:5, 555:8, 556:15,
556:22, 557:25, 558:2,
558:8, 558:23, 560:9,
561:8, 563:2, 564:1,
564:3, 564:11, 566:8,
568:1, 568:4, 569:3,
569:12, 569:21, 571:9,
572:15, 573:6, 573:9,
574:8, 574:24, 576:8,
577:21, 578:2, 578:19,
579:13, 580:12, 580:19,
581:17, 582:7, 583:10,
583:20, 586:23, 587:8,
588:20, 588:25, 589:10,
589:21, 590:2, 591:8,
591:9, 591:11, 591:20,
592:15, 592:22, 593:7,
594:9, 595:3, 595:9,
597:16, 597:22, 597:25,
598:7, 598:11, 598:15,
598:18, 599:10, 600:6,
601:6, 603:2, 603:14,
604:1, 604:10, 604:24,
606:8, 606:10, 607:4,
608:15, 611:15, 612:5,
613:8, 613:21, 614:4,
614:25, 615:9, 615:16,

615:23, 618:5, 618:13,
619:2, 621:1, 622:24,
624:7, 627:1, 627:7,
627:15, 627:25, 628:4,
629:2, 629:21, 630:10,
632:13, 637:17, 641:21,
642:16, 643:19, 644:4,
644:12, 645:2, 645:11,
645:16, 647:13, 648:8,
650:11, 656:8, 656:15,
658:1, 659:4, 659:13,
659:15, 659:16, 660:17,
660:20, 660:21, 665:18,
667:3, 667:23, 668:3,
668:6, 669:1, 669:5
draft [3] - 449:24,
494:19, 494:20
draw [1] - 604:22
Drew [2] - 454:3, 454:5
DRINKER [1] - 435:18
drop [1] - 450:11
Drs [1] - 656:22
drugs [1] - 448:5
dryers [1] - 460:25
dual [2] - 509:12, 512:18
duly [1] - 440:12
during [11] - 443:14,
465:25, 471:5, 473:19,
474:9, 565:19, 565:24,
569:3, 579:13, 667:20,
668:9
dust [9] - 449:7, 449:21,
449:23, 450:4, 450:13,
450:16, 450:21, 453:12
dusty [1] - 565:17

E

E-2 [1] - 602:9
earth [1] - 472:5
easier [1] - 626:10
easily [1] - 515:21
EAST [1] - 435:7
eat [1] - 460:10
eBay [6] - 550:3, 550:15,
590:6, 590:14, 607:22,
617:12
Ebola [1] - 459:14
ED [2] - 511:12, 518:6
edge [1] - 499:23
edged [1] - 516:5
EDS [2] - 491:1, 502:20
educate [1] - 444:19
educated [1] - 442:8

education [3] - 441:11,
501:17, 501:23
Edward [2] - 440:21,
670:7
EDXA [24] - 489:19,
491:1, 503:6, 503:7,
504:3, 504:14, 504:21,
505:10, 505:12, 508:20,
511:10, 514:16, 516:20,
516:24, 517:3, 517:19,
518:9, 545:6, 646:1,
646:4, 648:5, 648:18,
648:23, 649:15
EDXRA [1] - 514:1
effective [1] - 635:18
effectiveness [1] -
636:16
effects [3] - 559:2, 559:5,
655:23
efficient [6] - 477:7,
477:24, 524:21, 525:11,
597:23, 650:8
efforts [1] - 664:8
eight [9] - 563:8, 563:22,
619:4, 621:4, 623:11,
625:6, 630:22, 631:5,
655:6
eight-hour [2] - 563:8,
563:22
either [17] - 439:1,
470:15, 472:7, 479:19,
484:23, 501:20, 504:19,
513:3, 520:13, 526:24,
551:19, 567:15, 613:25,
634:13, 637:10, 655:16,
659:20
either/or [1] - 537:15
Electric [3] - 460:21,
460:23, 461:1
electron [35] - 443:10,
443:17, 443:22, 443:23,
444:2, 444:4, 444:16,
444:17, 446:17, 446:18,
447:2, 452:23, 459:13,
462:22, 474:21, 478:21,
487:8, 488:2, 489:2,
489:18, 491:20, 496:23,
497:16, 510:15, 510:24,
511:12, 511:25, 517:20,
518:2, 518:3, 529:15,
578:13, 588:21, 592:7,
649:14
electrons [3] - 487:17,

<p>487:18, 510:7 element [4] - 504:3, 505:22, 516:16, 516:20 elements [4] - 503:10, 505:2, 506:23, 517:4 Elmer [1] - 585:2 Elmo [1] - 608:6 ELMO [6] - 552:1, 569:25, 574:1, 626:12, 634:1, 645:15 elongated [3] - 497:18, 575:2, 576:25 elongation [5] - 531:5, 535:7, 535:9, 535:11, 536:5 Emergency [2] - 455:9, 583:5 employ [4] - 446:13, 446:14, 520:20, 620:1 employed [7] - 573:7, 598:4, 607:23, 608:22, 609:11, 610:9, 617:15 employee [8] - 598:17, 612:8, 612:11, 612:13, 613:23, 613:25, 614:1, 615:10 employees [3] - 446:1, 446:9, 614:7 employment [1] - 441:1 employs [1] - 592:20 encapsulating [1] - 656:10 encompasses [1] - 465:18 end [9] - 523:21, 534:2, 596:7, 605:7, 609:1, 609:4, 609:22, 628:3, 661:14 ended [2] - 451:8, 657:12 energy [2] - 444:3, 488:20 engineer [2] - 442:11, 442:12 Engineering [1] - 445:23 engineering [7] - 441:19, 441:20, 441:22, 444:9, 445:23, 448:17, 457:19 enhance [1] - 653:21 enhanced [1] - 653:12 enters [1] - 440:8 entire [3] - 598:15, 611:10, 611:12 entities [1] - 459:10</p>	<p>ENTITLED [1] - 671:8 entitled [1] - 652:18 environment [1] - 558:12 environmental [1] - 447:12 Environmental [7] - 448:19, 448:21, 454:18, 476:10, 476:13, 551:9, 582:16 EP [1] - 664:8 EPA [84] - 448:10, 448:12, 448:16, 449:5, 449:8, 449:10, 449:17, 449:19, 451:1, 454:14, 455:8, 468:14, 469:2, 469:5, 489:21, 489:24, 492:13, 493:13, 493:16, 493:17, 493:22, 494:6, 494:20, 494:23, 494:24, 495:2, 495:7, 495:13, 495:15, 495:16, 497:3, 497:7, 502:25, 503:13, 505:20, 506:4, 507:1, 507:3, 507:6, 507:19, 507:23, 508:1, 508:5, 513:7, 517:16, 517:22, 518:5, 518:11, 518:19, 518:24, 519:5, 519:20, 524:9, 549:4, 570:10, 572:20, 578:11, 581:25, 586:20, 617:15, 638:18, 647:7, 648:19, 648:24, 649:9, 649:18, 651:22, 654:7, 654:12, 655:11, 661:2, 661:8, 661:11, 661:16, 661:20, 662:17, 662:18, 663:5, 663:10, 667:2 EPA's [1] - 649:9 equal [14] - 468:21, 469:13, 488:9, 495:25, 498:5, 498:15, 511:22, 511:23, 519:21, 574:19, 645:22, 645:23, 648:7, 648:13 equipment [10] - 446:19, 462:22, 462:24, 462:25, 620:13, 624:25, 629:24, 639:23, 642:1 error [4] - 525:2, 525:12, 609:20, 650:9 errors [1] - 601:11 especially [2] - 563:16,</p>	<p>581:25 ESQUIRE [11] - 435:11, 435:12, 435:14, 435:14, 435:16, 435:18, 435:19, 435:20, 435:22, 436:6, 436:9 ESQUIRES [9] - 435:10, 435:12, 435:13, 435:15, 435:18, 435:20, 435:21, 436:6, 436:9 essentially [15] - 438:16, 452:10, 456:21, 459:21, 470:9, 471:19, 488:13, 494:11, 494:13, 494:18, 515:12, 523:5, 621:11, 633:12, 652:13 established [2] - 524:1, 664:6 estimate [2] - 613:13, 615:10 estimated [1] - 477:2 estimates [1] - 613:19 estimating [1] - 613:11 estimation [3] - 611:4, 628:4, 628:10 et [3] - 450:21, 628:15, 638:19 evaluate [1] - 612:10 evaluated [1] - 526:15 evaluating [2] - 539:3, 546:23 evaluation [1] - 634:14 evenly [1] - 468:25 evidence [5] - 481:11, 550:24, 551:1, 643:2, 665:9 evidenced [1] - 618:19 evolve [1] - 445:19 exact [2] - 527:13, 602:12 exactly [4] - 505:16, 511:4, 599:9, 636:11 exam [1] - 645:8 EXAMINATION [5] - 440:15, 486:6, 540:8, 606:6, 632:11 examination [19] - 483:14, 494:16, 507:9, 507:11, 507:14, 507:16, 517:14, 603:2, 605:1, 613:11, 619:22, 634:4, 646:13, 655:21, 656:16, 658:2, 659:15, 659:16,</p>	<p>667:22 examine [1] - 621:12 examined [3] - 514:1, 659:4, 660:21 examines [2] - 505:24, 625:9 example [33] - 439:9, 442:11, 442:19, 447:19, 457:15, 467:12, 468:12, 479:23, 480:12, 490:4, 496:2, 502:25, 506:17, 506:25, 515:17, 530:10, 530:25, 532:12, 534:18, 536:12, 559:20, 564:12, 564:16, 568:13, 573:14, 585:3, 604:20, 626:4, 626:5, 627:5, 653:21, 654:8, 654:25 examples [2] - 499:4, 509:23 exceeding [1] - 577:2 exception [1] - 474:9 excerpt [1] - 500:17 excess [2] - 493:1, 663:18 exclude [2] - 523:5, 572:17 excuse [1] - 596:2 excused [2] - 669:5, 669:7 exercise [3] - 600:6, 617:6, 618:21 exercises [1] - 601:1 exhibit [1] - 645:8 Exhibit [14] - 499:15, 502:9, 505:14, 514:19, 580:24, 612:20, 637:14, 637:16, 637:18, 645:7, 659:2, 660:19, 662:18, 664:2 Exhibits [2] - 533:10, 534:11 existence [1] - 473:20 exists [2] - 495:2, 652:7 expanded [1] - 494:13 expect [3] - 635:17, 639:14, 639:18 expected [1] - 443:24 expenses [1] - 462:17 expensive [1] - 463:2 experience [8] - 443:2, 444:25, 445:10, 500:24, 501:9, 501:10, 502:11,</p>
---	--	---	---

<p>512:25 experienced [1] - 501:5 expert [21] - 438:7, 461:14, 464:10, 488:25, 496:16, 538:23, 543:2, 543:20, 544:2, 545:1, 545:11, 547:4, 551:22, 554:9, 555:8, 564:3, 664:3, 664:8, 664:12, 664:15, 665:4 Expert [1] - 652:20 expertise [6] - 438:10, 438:20, 448:24, 481:12, 483:2, 512:25 experts [2] - 454:6, 614:9 explain [8] - 465:12, 469:9, 531:18, 596:14, 621:3, 621:9, 622:4, 622:8 explaining [1] - 653:18 explanation [5] - 623:20, 623:22, 623:23, 625:4, 625:6 explore [1] - 623:10 explored [1] - 472:21 exposed [5] - 555:24, 560:22, 563:11, 563:17, 565:8 exposure [35] - 493:1, 561:3, 561:5, 561:24, 562:10, 562:16, 562:18, 563:5, 563:6, 563:7, 563:22, 564:4, 564:13, 564:15, 564:19, 564:22, 564:24, 565:3, 566:19, 567:2, 567:18, 567:22, 654:4, 654:14, 654:21, 655:22, 656:2, 656:17, 657:1, 657:4, 657:20, 663:19, 663:25, 664:7 Exposure [1] - 563:12 exposures [5] - 492:25, 555:14, 557:15, 562:20, 663:18 expressed [1] - 539:2 extension [1] - 536:9 extent [2] - 481:8, 567:17 extinction [5] - 531:5, 535:23, 536:1, 536:3 extra [3] - 539:12, 648:11, 666:5 eye [3] - 470:1, 553:16, 611:5</p>	<p>eyes [1] - 469:22</p> <p style="text-align: center;">F</p> <p>face [1] - 589:11 facility [2] - 444:20, 562:9 fact [32] - 438:12, 438:17, 479:8, 519:13, 520:5, 529:3, 534:8, 537:11, 542:10, 544:1, 544:18, 554:21, 556:22, 557:6, 560:2, 562:5, 563:2, 571:9, 574:15, 574:24, 580:20, 593:1, 595:7, 606:16, 616:19, 618:23, 619:10, 621:3, 627:2, 627:21, 655:15, 662:19 factor [1] - 609:20 factors [1] - 628:13 facts [2] - 550:24, 551:1 failed [1] - 647:4 failure [1] - 447:25 fair [15] - 471:8, 542:20, 542:21, 564:11, 608:1, 608:2, 610:1, 614:9, 614:16, 615:25, 616:1, 619:23, 622:23, 627:3, 627:4 fairly [1] - 513:4 fall [1] - 582:3 falls [1] - 471:3 familiar [7] - 451:20, 563:13, 563:14, 571:25, 637:17, 661:2, 663:22 far [3] - 472:20, 479:11, 651:12 fast [2] - 487:1, 535:12 FDA [22] - 448:1, 448:2, 456:18, 456:21, 457:5, 457:8, 517:1, 546:12, 551:8, 553:1, 553:4, 553:8, 553:10, 553:19, 553:23, 554:1, 637:23, 638:1, 651:3, 651:7, 651:8, 652:14 FDA's [2] - 553:16, 651:13 feasible [2] - 664:10, 664:17 February [8] - 445:20, 516:21, 573:15, 578:20, 588:18, 612:21, 619:11,</p>	<p>645:2 federal [4] - 465:4, 465:5, 493:18, 551:13 feet [3] - 468:23, 468:24, 665:14 fertilizer [2] - 461:4, 461:13 few [6] - 437:23, 474:9, 535:8, 553:20, 597:13, 616:15 fiber [78] - 468:7, 468:13, 468:16, 469:5, 470:8, 482:22, 488:8, 496:25, 497:23, 497:24, 498:4, 500:3, 500:5, 506:17, 509:4, 509:21, 511:14, 515:21, 518:4, 520:3, 520:7, 520:13, 524:2, 524:7, 524:11, 524:18, 525:20, 526:1, 526:6, 526:8, 526:12, 526:17, 526:25, 528:3, 528:9, 541:8, 541:12, 570:12, 574:2, 575:3, 577:1, 577:11, 577:16, 580:17, 581:20, 585:3, 587:21, 587:24, 588:9, 588:22, 590:1, 593:13, 593:19, 593:20, 594:6, 594:11, 594:18, 594:23, 595:6, 595:11, 595:12, 595:15, 596:25, 599:4, 601:6, 601:16, 602:13, 602:18, 602:20, 602:24, 603:23, 604:5, 604:12, 604:22, 647:20, 655:7, 668:21 Fiber [1] - 497:18 fibers [54] - 444:7, 456:3, 456:4, 458:13, 469:19, 469:21, 470:7, 487:14, 487:19, 489:11, 491:8, 496:21, 515:9, 515:13, 526:22, 530:16, 532:1, 532:5, 532:8, 532:11, 532:13, 532:20, 533:1, 533:6, 533:25, 534:4, 534:13, 535:2, 563:18, 564:13, 566:1, 573:16, 573:19, 574:13, 575:25, 580:13, 582:10, 589:3, 589:12, 589:19, 593:25, 596:7, 596:17, 596:21, 600:24, 629:17, 630:6,</p>	<p>662:2, 662:6, 662:11, 667:5, 667:10, 668:4 fibers/bundles [1] - 530:2 fibrous [40] - 465:19, 467:11, 467:12, 467:14, 467:18, 467:21, 467:22, 467:23, 468:1, 468:2, 468:4, 468:8, 468:10, 489:14, 492:6, 492:7, 508:16, 508:18, 508:22, 508:23, 509:16, 510:17, 510:20, 511:8, 511:19, 511:20, 512:5, 559:5, 560:24, 581:24, 582:14, 594:4, 646:22, 646:23, 658:18, 658:21, 658:22 fictional [1] - 558:19 field [3] - 441:21, 467:1, 558:5 fifties [1] - 489:10 figure [8] - 481:19, 543:16, 614:6, 626:22, 627:1, 630:11, 630:16, 630:21 figuring [1] - 599:22 fill [2] - 599:12, 625:9 filled [3] - 541:2, 601:2, 602:5 filling [1] - 541:11 films [1] - 529:8 filter [4] - 439:23, 489:11, 489:14, 516:7 filters [2] - 478:19, 487:3 finally [2] - 445:11, 537:17 FINCH [1] - 435:14 findings [16] - 464:4, 483:5, 491:7, 514:16, 527:12, 537:24, 541:24, 558:24, 559:14, 559:19, 564:2, 601:14, 601:22, 623:18, 623:19, 626:19 fine [2] - 460:10, 656:12 finest [1] - 479:21 finish [2] - 540:13, 666:7 finished [2] - 556:7, 560:3 finishing [2] - 512:7, 666:3 Finland [1] - 521:22 fireproofing [8] - 450:10, 450:11, 450:13, 450:20,</p>
---	---	---	---

<p>457:17, 457:20, 457:23, 458:2</p> <p>Fireproofing [1] - 585:15</p> <p>firing [1] - 542:14</p> <p>firm [6] - 437:16, 445:23, 461:14, 461:21, 578:22, 626:18</p> <p>firms [1] - 461:21</p> <p>first [30] - 439:1, 440:12, 443:5, 443:11, 443:19, 444:16, 444:21, 445:1, 445:2, 449:8, 463:5, 475:7, 477:8, 478:24, 479:11, 489:8, 533:13, 536:25, 554:12, 554:16, 554:17, 558:10, 584:13, 602:23, 610:21, 631:15, 633:15, 635:6, 635:11, 635:20</p> <p>FISHER [1] - 435:7</p> <p>five [13] - 442:1, 449:12, 453:17, 461:11, 469:13, 469:14, 500:15, 526:12, 542:20, 566:10, 604:21, 668:8, 668:10</p> <p>five-to-one [1] - 500:15</p> <p>fixed [1] - 459:21</p> <p>flakes [1] - 480:22</p> <p>flash [1] - 482:12</p> <p>flexibility [9] - 522:5, 522:10, 522:12, 522:23, 523:3, 647:13, 647:14, 647:18, 658:15</p> <p>flip [1] - 596:1</p> <p>float [1] - 478:12</p> <p>floating [1] - 481:20</p> <p>FLOM [1] - 435:20</p> <p>Florida [3] - 441:14, 441:18, 443:15</p> <p>flotation [1] - 479:20</p> <p>fluid [1] - 530:23</p> <p>focal [1] - 595:25</p> <p>focus [2] - 533:14, 614:20</p> <p>focusing [1] - 444:19</p> <p>folks [8] - 541:20, 559:12, 559:21, 560:3, 602:3, 602:23, 605:1, 624:10</p> <p>follow [22] - 453:5, 464:21, 464:23, 465:1, 475:20, 486:11, 504:10, 508:1, 508:12, 509:14,</p>	<p>511:5, 516:11, 519:13, 527:22, 531:6, 561:25, 614:11, 614:24, 636:12, 649:21, 662:20, 663:10</p> <p>followed [8] - 452:25, 458:9, 518:22, 531:12, 634:14, 634:24, 652:2</p> <p>following [12] - 455:22, 457:3, 507:10, 513:8, 517:9, 532:10, 536:5, 597:16, 622:3, 648:10, 648:11, 671:6</p> <p>follows [3] - 440:13, 494:14, 653:10</p> <p>foot [2] - 445:25, 446:16</p> <p>FOR [1] - 435:1</p> <p>Force [2] - 459:8, 459:20</p> <p>forget [1] - 455:15</p> <p>form [6] - 482:22, 507:9, 521:4, 532:21, 655:16, 655:19</p> <p>formally [1] - 494:23</p> <p>formation [1] - 539:9</p> <p>formed [5] - 646:15, 660:24, 661:4, 662:3, 662:24</p> <p>forming [1] - 656:19</p> <p>forms [6] - 521:9, 521:15, 521:18, 521:19, 521:20, 581:24</p> <p>formula [1] - 466:12</p> <p>formulas [2] - 458:15, 465:16</p> <p>Formulas [1] - 465:14</p> <p>formulations [1] - 457:22</p> <p>forth [19] - 453:22, 455:19, 463:13, 464:10, 472:25, 485:4, 486:9, 486:11, 487:25, 494:25, 497:8, 506:21, 514:18, 517:4, 517:22, 647:7, 647:8, 666:9</p> <p>forward [2] - 438:7, 474:25</p> <p>foundation [1] - 472:16</p> <p>four [9] - 449:11, 494:7, 501:25, 525:3, 525:11, 525:18, 600:19, 601:25, 602:3</p> <p>four-year [1] - 501:25</p> <p>fragment [18] - 518:16, 569:15, 569:17, 569:18,</p>	<p>576:17, 576:19, 578:3, 578:8, 578:25, 579:19, 579:22, 580:4, 665:22, 666:12, 666:15, 666:18, 666:22</p> <p>fragments [12] - 559:7, 574:12, 575:2, 575:9, 575:15, 575:16, 575:24, 576:25, 577:19, 578:9, 582:3, 665:19</p> <p>Francisco [1] - 458:25</p> <p>frankly [1] - 460:2</p> <p>FREDA [1] - 435:8</p> <p>freeze [1] - 482:13</p> <p>friable [1] - 655:11</p> <p>Friday [1] - 471:6</p> <p>front [3] - 470:5, 554:16, 565:13</p> <p>Frye [2] - 463:22, 465:6</p> <p>full [2] - 440:19, 596:11</p> <p>furniture [1] - 456:16</p>	<p>generally-accepted [37] - 458:10, 462:2, 464:8, 468:8, 468:13, 469:18, 474:22, 475:21, 489:6, 489:24, 491:20, 492:13, 502:25, 516:13, 518:21, 518:25, 520:14, 520:16, 523:15, 524:1, 524:14, 528:8, 530:5, 531:19, 534:22, 535:14, 535:15, 647:10, 647:16, 648:22, 649:18, 649:22, 651:22, 652:3, 660:1, 661:6, 666:10</p> <p>generally-recognized [1] - 648:2</p> <p>generate [3] - 574:17, 612:5, 654:13</p> <p>generated [6] - 463:24, 611:6, 611:15, 611:18, 613:9, 615:18</p> <p>generated-standards [1] - 613:9</p> <p>generating [1] - 459:22</p> <p>geological [1] - 539:9</p> <p>geologist [2] - 472:18, 501:21</p> <p>geologists [2] - 446:24, 501:22</p> <p>Geology [1] - 476:18</p> <p>geology [1] - 447:2</p> <p>geometry [2] - 468:10, 511:22</p> <p>Georgia [3] - 440:23, 440:24, 621:16</p> <p>GEREL [1] - 435:12</p> <p>given [10] - 463:18, 542:23, 554:24, 555:7, 555:8, 562:23, 566:3, 620:21, 644:8, 660:13</p> <p>glass [1] - 478:19</p> <p>gold [4] - 480:16, 480:19, 480:21</p> <p>goniometer [6] - 509:4, 509:6, 509:21, 510:11, 511:14, 512:2</p> <p>Gordon [1] - 656:22</p> <p>Gotshal [1] - 437:21</p> <p>GOTSHAL [1] - 436:6</p> <p>government [11] - 547:1, 547:9, 550:22, 550:25, 551:5, 551:18, 552:22, 638:18, 651:18, 651:19,</p>
G			
<p>gained [1] - 505:8</p> <p>gaskets [1] - 556:17</p> <p>GE [3] - 461:9, 461:10, 544:12</p> <p>general [17] - 459:10, 466:17, 472:4, 472:6, 473:3, 487:24, 493:6, 495:6, 496:7, 497:11, 501:17, 512:22, 520:25, 522:1, 522:15, 522:20, 571:5</p> <p>General [3] - 460:20, 460:23, 461:1</p> <p>generally [47] - 458:10, 462:2, 464:8, 468:2, 468:8, 468:13, 469:18, 474:22, 475:21, 489:6, 489:24, 491:20, 492:13, 499:18, 501:19, 502:24, 502:25, 516:13, 518:21, 518:25, 520:14, 520:16, 523:15, 524:1, 524:14, 528:8, 530:5, 531:19, 534:22, 535:14, 535:15, 574:25, 576:25, 581:7, 581:12, 640:19, 647:10, 647:16, 648:2, 648:22, 649:18, 649:22, 651:22, 652:3, 660:1, 661:6, 666:10</p>			

<p>660:7 Grace [2] - 458:4, 585:14 grade [1] - 521:9 graduate [5] - 441:17, 443:14, 443:20, 443:24, 444:1 graduated [3] - 441:19, 443:13, 444:10 graduating [1] - 444:13 grains [1] - 469:23 gram [8] - 530:3, 530:7, 530:13, 530:14, 655:4, 655:14, 657:14 gravimetric [1] - 551:9 gravity [1] - 450:14 greater [32] - 469:7, 469:14, 488:9, 488:11, 493:11, 495:25, 498:5, 498:15, 500:1, 500:15, 511:22, 511:23, 519:18, 519:21, 532:3, 533:22, 534:6, 534:7, 563:7, 573:18, 574:18, 578:5, 579:1, 582:5, 594:1, 629:19, 630:7, 641:2, 645:22, 648:7, 648:13 green [1] - 447:15 grew [5] - 446:3, 580:15, 582:12, 646:14, 646:21 grid [21] - 499:23, 515:17, 515:22, 516:2, 516:3, 516:5, 516:7, 516:9, 525:4, 527:9, 529:7, 529:11, 596:23, 596:24, 599:3, 600:19, 602:4, 602:8, 602:9, 641:9, 641:13 grids [2] - 515:24, 529:9 ground [1] - 492:8 Group [3] - 448:10, 449:9, 650:19 group [11] - 448:12, 448:16, 448:23, 449:11, 454:5, 455:24, 456:8, 603:16, 622:18, 623:2, 653:10 groups [1] - 442:1 growth [9] - 572:13, 646:15, 646:18, 646:19, 646:24, 646:25, 647:4, 658:11, 661:4 guess [3] - 482:4, 494:8, 617:10</p>	<p>guidance [2] - 448:20, 620:8 guidelines [1] - 531:16 guys [1] - 603:11 gypsum [1] - 458:3 Gypsum [1] - 496:2</p> <hr/> <p style="text-align: center;">H</p> <hr/> <p>habit [13] - 572:13, 573:3, 580:16, 582:12, 646:15, 646:18, 646:19, 646:21, 646:24, 646:25, 647:4, 658:11, 661:5 habits [1] - 568:11 hair [5] - 460:25, 469:24, 470:1, 470:10 half [2] - 488:11, 562:16 hand [4] - 467:21, 490:9, 509:2, 510:4 hard [1] - 596:12 Hawaii [1] - 458:24 haystack [1] - 642:4 Hazard [2] - 455:9, 583:5 hazardous [2] - 654:4, 654:14 HD [2] - 629:23, 630:12 head [1] - 490:14 heading [1] - 484:21 health [7] - 450:3, 559:2, 559:4, 561:23, 571:24, 653:3, 655:22 Health [5] - 459:12, 476:10, 476:13, 476:14, 661:23 health-based [1] - 571:24 hear [7] - 441:6, 441:7, 444:22, 460:12, 538:6, 575:17, 647:3 heard [6] - 462:7, 547:13, 582:20, 603:1, 603:2, 632:25 HEARING [1] - 435:4 hearing [1] - 464:17 heavier [1] - 477:19 Heavy [1] - 476:6 heavy [86] - 439:10, 476:22, 477:14, 477:15, 478:8, 478:9, 478:22, 479:2, 479:9, 479:16, 479:19, 480:2, 480:12, 481:2, 481:19, 481:25, 482:3, 482:6, 482:18,</p>	<p>483:7, 483:9, 484:14, 484:24, 485:8, 486:8, 486:13, 529:16, 537:3, 537:7, 537:8, 537:13, 540:22, 545:4, 545:8, 545:15, 547:20, 548:3, 548:15, 548:18, 548:20, 549:14, 550:18, 551:10, 553:11, 590:23, 591:3, 591:13, 592:4, 607:2, 614:13, 632:21, 632:23, 633:2, 633:5, 633:8, 633:11, 633:15, 633:21, 634:5, 634:8, 634:13, 634:18, 635:6, 635:11, 635:20, 635:22, 636:3, 636:9, 636:17, 639:10, 640:7, 640:15, 641:22, 642:6, 642:8, 642:10, 642:22, 642:23, 651:4, 651:17, 652:4, 653:7, 653:20, 653:24, 664:22, 665:2 help [1] - 449:6 helpful [3] - 439:5, 460:4, 645:1 helps [1] - 630:1 Herford [3] - 568:21, 568:23, 569:3 Hess [20] - 610:22, 610:24, 611:2, 611:8, 613:10, 615:19, 620:22, 624:15, 624:17, 625:8, 625:24, 626:5, 626:11, 626:22, 626:23, 627:2, 627:8, 627:12, 627:14, 627:17 hess [4] - 628:6, 628:18, 628:19, 629:4 Hess's [1] - 626:13 hexagonal [4] - 511:13, 512:1, 512:4 high [30] - 459:12, 521:24, 522:5, 522:10, 522:22, 523:1, 523:3, 528:1, 535:3, 574:22, 587:14, 620:16, 620:18, 621:5, 621:11, 621:13, 621:15, 623:25, 624:2, 630:8, 632:1, 637:11, 639:4, 639:21, 642:5, 647:23, 653:2, 653:5 higher [14] - 469:25,</p>	<p>477:9, 477:22, 487:13, 501:23, 503:23, 505:4, 533:2, 534:12, 564:14, 587:11, 629:16, 630:1, 657:2 highest [1] - 559:21 highlighted [2] - 464:1, 559:20 himself [1] - 438:14 hired [8] - 445:11, 458:19, 461:21, 461:25, 547:4, 547:12, 551:22, 554:9 hires [1] - 462:3 hiring [1] - 542:14 historical [7] - 438:25, 473:7, 537:17, 537:21, 538:10, 657:17, 667:20 historically [2] - 521:5, 654:12 holder [1] - 515:23 holding [3] - 490:9, 505:14, 656:9 holes [1] - 516:4 homes [1] - 563:16 Honor [49] - 437:15, 437:19, 437:20, 438:12, 438:23, 440:5, 460:6, 470:14, 470:17, 470:18, 470:23, 470:24, 471:5, 481:14, 482:24, 484:17, 499:6, 523:25, 533:11, 536:8, 537:23, 538:13, 539:11, 545:20, 551:2, 557:11, 562:1, 567:6, 568:19, 578:15, 588:15, 605:7, 612:18, 614:23, 636:13, 644:5, 650:22, 655:20, 656:1, 657:3, 659:8, 659:11, 659:14, 660:15, 661:7, 665:24, 667:16, 667:19, 669:3 Honor's [1] - 597:16 HONORABLE [1] - 435:8 hopefully [3] - 477:11, 480:21, 625:21 HOURLY [1] - 665:25 hour [2] - 563:8, 563:22 hours [12] - 453:18, 523:22, 523:23, 620:22, 624:18, 627:20, 627:22, 627:24, 628:2, 628:6, 628:7, 628:9</p>
---	--	--	---

<p>house [4] - 636:19, 636:24, 637:4, 644:23 household [1] - 557:15 human [5] - 469:24, 470:1, 470:10, 561:11 Human [1] - 476:14 hundreds [10] - 445:7, 445:8, 453:17, 459:3, 555:2, 555:9, 587:13, 655:4 Hygiene [1] - 456:1</p>	<p>Imerys [1] - 473:19 impart [1] - 609:19 implanted [1] - 442:6 importance [1] - 496:12 important [8] - 450:3, 450:8, 451:16, 451:18, 469:17, 485:15, 508:17, 538:8 impossible [5] - 522:25, 523:17, 647:11, 647:20, 647:21 improve [1] - 664:17 IN [2] - 435:4, 671:7 in-house [4] - 636:19, 636:24, 637:4, 644:23 inappropriate [2] - 438:21, 604:9 incidentally [1] - 597:25 include [12] - 454:3, 454:8, 454:12, 454:16, 473:25, 478:9, 490:12, 585:12, 613:21, 614:4, 615:6, 615:16 included [6] - 463:20, 471:1, 471:3, 475:4, 504:2, 556:7 includes [1] - 652:4 including [20] - 457:25, 460:14, 460:20, 466:4, 475:2, 479:7, 490:13, 493:7, 498:13, 502:3, 522:2, 523:6, 524:8, 524:14, 571:10, 572:5, 601:5, 651:22, 664:16, 664:24 incomplete [1] - 649:13 inconsistencies [3] - 622:21, 628:5, 635:9 incorporate [1] - 521:1 incorporated [2] - 498:25, 506:12 increase [2] - 479:21, 593:1 increased [2] - 477:1, 477:5 increases [3] - 596:2, 635:22, 635:23 Independent [1] - 456:12 independent [5] - 597:1, 622:14, 636:21, 643:10, 643:11 independently [1] - 527:12</p>	<p>index [1] - 530:23 indicate [1] - 497:2 indicated [1] - 664:18 indicates [1] - 564:12 indicator [1] - 496:20 indices [2] - 487:5, 533:19 indispensable [1] - 589:23 individual [24] - 445:24, 459:1, 462:1, 470:7, 473:10, 515:13, 516:9, 532:1, 532:5, 532:7, 533:24, 534:13, 535:2, 563:3, 563:6, 567:1, 580:13, 582:10, 589:3, 589:12, 602:5, 620:23, 628:24, 629:4 individuals [3] - 541:16, 560:20, 561:2 industrial [3] - 471:17, 538:1, 563:14 Industrial [1] - 456:1 industry [2] - 454:9, 479:4 infants [1] - 563:16 influence [1] - 475:8 information [16] - 465:23, 489:3, 576:12, 580:17, 584:9, 588:2, 588:12, 599:24, 600:2, 601:2, 601:9, 610:17, 614:4, 615:17, 619:17, 625:14 infrared [1] - 638:17 ingredients [1] - 458:3 inhale [1] - 566:1 initial [5] - 450:25, 606:14, 617:11, 617:12, 644:17 initiated [1] - 623:7 inorganic [2] - 446:25, 456:6 inquiry [3] - 438:5, 643:12, 667:16 inside [6] - 515:22, 516:3, 533:25, 535:2, 586:19, 629:17 installed [1] - 621:16 instance [1] - 461:9 instances [1] - 610:10 instead [5] - 482:10, 482:15, 491:25, 591:15,</p>	<p>592:7 Institute [5] - 455:5, 466:9, 476:12, 501:2, 661:23 institute [1] - 584:7 Institutes [1] - 459:12 Instron [1] - 523:14 instruct [1] - 620:12 instructed [1] - 617:3 instructions [2] - 601:7, 620:4 instrument [2] - 487:21, 487:22 instrumental [1] - 653:12 instruments [2] - 443:25, 475:13 insulation [1] - 654:9 Insurance [1] - 459:2 intend [1] - 437:24 intended [1] - 522:16 interested [1] - 449:19 interference [1] - 476:2 internal [2] - 438:2, 438:24 internally [1] - 479:9 International [5] - 439:16, 451:12, 456:9, 483:8, 495:12 international [1] - 652:5 interpret [5] - 438:11, 438:19, 438:20, 439:22, 483:1 interpretation [3] - 438:4, 438:16, 537:24 interpreting [1] - 481:9 interrupt [2] - 460:1, 665:25 introduce [1] - 667:25 invited [2] - 448:18, 449:5 involve [3] - 453:24, 458:6, 607:11 involved [7] - 443:6, 443:11, 445:13, 445:21, 453:17, 576:8, 577:14 involvement [1] - 452:5 involving [4] - 464:4, 561:22, 566:4, 632:20 IR [5] - 638:15, 638:22, 639:17, 652:8, 652:15 IRD [1] - 639:3 iron [7] - 503:21, 503:22, 503:23, 548:7, 548:15,</p>
<p>I</p>			
<p>ID [1] - 457:21 idea [5] - 471:13, 471:24, 478:7, 585:23, 586:7 identical [2] - 508:21, 590:24 identification [5] - 508:7, 514:1, 526:22, 545:18, 551:12 identified [25] - 462:19, 466:16, 466:24, 500:12, 504:21, 513:9, 518:22, 527:15, 531:23, 533:3, 533:7, 534:20, 539:4, 559:8, 623:17, 624:8, 629:23, 648:21, 649:12, 649:16, 654:10, 660:24, 661:5, 661:8, 662:22 identifies [2] - 503:16, 590:3 identify [28] - 458:13, 458:14, 479:17, 485:14, 486:25, 487:6, 487:13, 492:5, 499:11, 504:19, 514:2, 514:6, 518:8, 518:9, 524:25, 525:9, 531:12, 531:24, 533:5, 545:9, 568:17, 582:10, 586:20, 588:8, 588:22, 638:8, 648:16, 664:8 identifying [10] - 516:13, 517:15, 524:7, 525:5, 535:19, 550:20, 580:13, 646:2, 647:2, 663:11 II [1] - 474:9 III [1] - 458:5 image [5] - 459:14, 465:15, 489:17, 593:11, 593:15 imagery [1] - 515:5 images [1] - 650:14</p>			

<p>548:16, 548:20 Irving [2] - 490:5, 490:13 IS [1] - 671:6 ISO [120] - 439:15, 456:8, 456:11, 483:13, 483:15, 483:16, 483:22, 484:1, 484:9, 484:25, 485:7, 486:11, 497:17, 498:3, 498:9, 498:14, 498:20, 506:6, 506:9, 506:20, 508:14, 508:25, 509:10, 509:14, 511:9, 511:18, 512:8, 512:12, 512:17, 513:7, 515:7, 520:5, 520:11, 528:16, 530:23, 531:2, 531:6, 531:10, 531:13, 531:16, 531:23, 532:15, 532:24, 534:8, 535:8, 535:14, 536:23, 537:11, 547:2, 547:5, 547:21, 549:2, 549:6, 549:8, 549:9, 549:11, 549:14, 551:19, 572:20, 573:1, 574:24, 576:17, 576:18, 576:23, 580:19, 580:25, 581:6, 581:10, 589:1, 589:5, 589:7, 589:18, 589:19, 589:22, 590:23, 592:6, 592:21, 607:3, 607:5, 607:9, 607:10, 608:3, 608:10, 610:9, 613:17, 614:12, 617:4, 617:24, 617:25, 618:7, 618:14, 619:11, 619:13, 620:1, 620:7, 620:15, 629:23, 631:6, 632:20, 633:1, 633:16, 634:3, 634:7, 635:4, 635:10, 635:15, 636:8, 637:2, 640:10, 641:17, 642:8, 642:16, 644:2, 644:18, 644:19, 647:7, 649:3, 652:2 ISO's [1] - 573:2 issue [11] - 437:9, 438:17, 439:7, 470:24, 512:11, 535:18, 538:16, 604:2, 644:6, 650:23, 667:9 issued [6] - 449:24, 483:12, 538:24, 549:22, 631:15, 667:14 issues [5] - 454:14,</p>	<p>457:13, 579:16, 626:16, 668:4 issuing [1] - 606:13 Italian [2] - 474:8, 639:12 Italy [2] - 539:5, 560:17 item [2] - 475:8, 564:7 itself [1] - 620:7</p> <p style="text-align: center;">J</p> <p>J&J [5] - 437:21, 440:1, 472:17, 527:3, 659:19 J&J's [2] - 636:17, 649:13 J-3 [33] - 527:1, 527:7, 527:9, 527:14, 527:18, 527:22, 528:2, 528:12, 528:24, 529:2, 616:10, 616:16, 617:3, 623:12, 632:15, 633:14, 633:17, 633:25, 635:9, 635:14, 636:6, 636:20, 640:5, 640:15, 640:22, 641:7, 641:18, 641:24, 642:21, 644:1, 644:13, 644:17, 645:3 James [1] - 496:11 January [2] - 631:16, 645:5 Jerome [1] - 437:15 JEROME [1] - 435:16 Jersey [5] - 457:14, 457:24, 464:13, 464:21, 465:2 JERSEY [4] - 435:1, 435:14, 435:18, 435:19 Jim [2] - 454:12, 582:4 job [1] - 502:16 jobs [1] - 542:17 JOHN [1] - 435:20 John's [1] - 660:10 JOHNSON [2] - 435:4 Johnson [180] - 436:7, 438:3, 438:8, 439:11, 453:1, 453:6, 454:6, 454:20, 458:7, 462:8, 462:9, 464:2, 464:5, 466:3, 466:8, 466:14, 466:16, 466:17, 466:19, 472:13, 473:8, 473:19, 473:24, 474:4, 474:8, 474:12, 474:13, 474:16, 476:5, 479:7, 479:8, 479:14, 479:15, 479:18,</p>	<p>480:1, 480:4, 480:25, 482:8, 483:14, 490:1, 490:21, 498:9, 500:12, 503:18, 504:1, 504:22, 505:18, 507:16, 507:17, 508:3, 509:24, 510:21, 513:10, 513:12, 513:15, 513:21, 514:6, 514:9, 514:17, 514:24, 515:3, 516:14, 517:5, 517:10, 517:13, 517:14, 518:23, 519:4, 519:8, 519:9, 519:16, 519:17, 519:22, 520:1, 520:21, 521:16, 524:21, 525:17, 526:20, 528:13, 529:13, 529:14, 530:7, 531:7, 531:21, 533:7, 534:20, 534:21, 535:20, 536:14, 537:18, 537:20, 537:21, 538:10, 538:11, 539:6, 539:10, 550:6, 559:16, 560:21, 562:19, 562:20, 587:4, 600:16, 611:22, 614:10, 632:16, 632:25, 638:4, 639:8, 640:6, 640:13, 641:19, 648:21, 649:5, 649:16, 650:20, 657:16, 657:17, 658:5, 658:9, 658:19, 658:23, 658:24, 660:21, 660:24, 663:12, 664:20, 664:24, 665:1, 665:6, 665:9, 665:10, 666:21, 668:13, 668:19 Johnson's [78] - 453:1, 458:8, 464:5, 473:5, 473:24, 474:17, 476:5, 480:25, 490:1, 490:22, 498:10, 499:7, 500:12, 503:18, 504:22, 505:18, 508:3, 509:24, 510:21, 513:10, 513:15, 513:22, 514:6, 514:9, 514:17, 514:24, 515:3, 516:14, 517:11, 518:23, 519:4, 519:8, 519:9, 520:1, 520:21, 521:16, 530:7, 530:25, 531:8, 531:21, 535:20, 536:14, 537:18, 537:20, 537:21, 539:6, 587:4, 600:9, 600:16, 611:23, 615:21, 632:16, 632:25, 639:8, 640:6,</p>	<p>640:14, 641:19, 648:22, 649:5, 649:17, 654:24, 655:9, 655:14, 656:18, 657:16, 658:5, 658:9, 658:19, 658:23, 660:22, 660:24, 663:12, 664:21, 664:24, 665:6, 666:21, 668:13, 668:20 Jose [1] - 446:8 journal [1] - 476:10 Judge [2] - 446:11, 610:6 Judge's [1] - 614:24 juggling [1] - 544:2 JULIE [1] - 435:19 July [3] - 622:1, 631:19, 643:20 JULY [1] - 435:4 jumper [1] - 459:22 June [3] - 616:23, 667:14, 667:15 jury [3] - 439:22, 554:16, 565:13</p> <p style="text-align: center;">K</p> <p>Keaton [2] - 500:21, 501:20 keep [6] - 441:5, 462:25, 480:20, 509:18, 591:5, 628:14 keeping [2] - 455:23, 656:10 Kent [2] - 489:9, 489:14 Kentucky [3] - 464:14, 464:15, 544:6 key [3] - 447:11, 475:6, 475:10 kids [2] - 583:13, 584:20 kind [6] - 437:22, 458:3, 461:8, 558:13, 606:21, 625:10 kinds [2] - 568:13, 569:6 knowing [1] - 665:10 knowledge [3] - 438:9, 478:24, 479:1 known [8] - 451:2, 466:21, 467:2, 476:5, 523:5, 523:13, 603:5, 616:13 knows [1] - 578:8 Konigsberg [2] - 437:16, 461:22 KONISBERG [1] - 435:15</p>
---	--	---	---

Krekeler [1] - 538:24	LAPINSKI [1] - 435:14	510:4, 593:11, 594:17, 594:21, 595:4, 598:14	487:21, 491:21, 501:2, 530:18, 531:13, 531:15, 531:21, 533:1, 533:8, 534:20, 535:15, 536:3, 536:13, 536:19, 537:3, 537:6, 537:12, 607:11, 616:25, 623:15, 632:20, 632:23, 633:2, 633:4, 633:14, 633:21, 635:5, 636:16, 639:10, 640:1, 640:3, 641:22, 642:11, 649:23, 653:8, 662:12
L	large [3] - 550:1, 567:22, 590:14	left-hand [1] - 510:4	lighter [2] - 478:11, 480:19
Lab [1] - 633:14	laser [1] - 469:13	legend [6] - 558:4, 558:7, 558:11, 558:12, 558:14, 558:21	lights [1] - 450:18
lab [72] - 455:10, 455:11, 455:24, 456:8, 456:18, 456:21, 457:6, 457:8, 471:20, 500:18, 502:5, 502:6, 504:23, 508:6, 527:22, 528:24, 543:3, 544:19, 547:5, 553:1, 553:6, 556:3, 557:2, 597:1, 611:5, 611:15, 611:18, 612:1, 612:16, 614:15, 615:18, 616:8, 616:10, 616:16, 618:9, 618:10, 619:3, 619:7, 621:3, 621:4, 622:20, 622:25, 623:12, 625:2, 625:3, 628:5, 632:2, 632:15, 633:17, 633:20, 635:9, 635:17, 636:21, 640:6, 641:23, 641:24, 643:4, 643:9, 643:11, 645:12, 649:20, 649:21, 650:2, 660:23, 667:3, 667:8, 667:23, 668:3, 668:9	last [14] - 449:15, 461:10, 463:7, 464:22, 465:2, 484:13, 485:4, 506:8, 533:13, 608:14, 632:14, 634:3, 668:8, 668:10	Leigh [1] - 470:19	likely [3] - 478:16, 499:23, 560:22
lab-generated [1] - 611:15	late [2] - 449:14, 598:3	LEIGH [1] - 435:11	Limit [1] - 563:12
labeled [1] - 465:19	latest [1] - 643:17	length [16] - 468:17, 469:6, 469:10, 469:13, 469:14, 469:15, 488:10, 488:11, 497:13, 532:9, 533:22, 573:18, 574:18, 591:18, 645:23, 666:1	limit [7] - 475:9, 520:12, 563:7, 563:18, 653:2, 654:12, 655:6
labeling [1] - 447:15	launch [1] - 459:17	length-to-width [1] - 532:9	limitations [1] - 620:8
Laboratories [2] - 444:15, 445:22	law [4] - 461:14, 461:17, 461:21, 626:18	lens [12] - 596:1, 620:13, 620:19, 624:5, 624:24, 628:14, 629:12, 629:16, 629:24, 629:25, 630:13	limited [2] - 460:2, 613:19
laboratories [3] - 466:17, 493:19, 596:20	Law [2] - 445:23, 445:24	lenses [1] - 642:2	limits [9] - 493:2, 565:4, 639:4, 639:17, 652:11, 653:4, 654:10, 663:19, 664:17
Laboratory [2] - 455:4, 603:8	lawsuit [1] - 555:3	less [25] - 444:18, 492:19, 492:23, 496:3, 534:5, 563:23, 566:7, 566:8, 566:13, 566:24, 567:1, 575:9, 575:16, 575:20, 576:2, 576:13, 587:6, 587:7, 587:9, 610:15, 648:1, 648:9, 648:14, 663:16, 666:19	Lincoln's [1] - 470:5
laboratory [18] - 445:12, 446:4, 446:5, 446:6, 446:7, 446:16, 448:3, 448:4, 453:13, 455:20, 457:2, 466:7, 466:18, 512:13, 512:22, 520:19, 527:1, 585:22	lawyer [2] - 632:17, 660:22	level [15] - 444:1, 522:19, 528:1, 564:19, 564:22, 564:23, 564:24, 565:10, 598:24, 619:22, 620:24, 640:12, 640:18, 663:25, 668:18	line [5] - 482:10, 545:25, 604:22, 623:21, 667:18
labs [6] - 451:20, 631:2, 631:8, 640:6, 641:13, 667:2	lawyers [12] - 445:23, 543:7, 544:16, 544:20, 547:12, 550:2, 554:10, 555:13, 555:18, 555:23, 590:15, 632:25	levels [17] - 500:24, 502:10, 503:10, 560:10, 560:23, 561:10, 564:4, 567:21, 587:2, 587:3, 607:19, 654:1, 654:2, 656:3, 657:1, 664:7, 664:11	lines [10] - 509:3, 509:20, 557:14, 567:11, 568:22, 568:24, 578:21, 588:19, 612:22, 612:24
Labs [1] - 456:12	layer [6] - 509:3, 509:20, 510:10, 510:12, 510:13, 510:14	LEVY [1] - 435:15	Liquid [1] - 476:6
lacking [1] - 472:16	laying [1] - 499:24	Levy [2] - 437:16, 461:21	liquid [79] - 439:10, 476:22, 477:14, 477:15, 477:17, 478:8, 478:22, 479:2, 479:9, 479:16, 479:19, 480:3, 480:12, 481:2, 482:6, 482:13, 482:18, 483:7, 483:9, 484:14, 484:24, 485:9, 486:8, 486:13, 529:16, 537:4, 537:7, 537:8, 537:13, 540:22, 545:5, 545:8, 545:16, 547:20, 548:3, 548:18, 550:19, 551:10, 553:11, 590:24, 591:3, 591:14, 592:5, 607:2, 614:13, 632:21, 632:24, 633:2, 633:5,
Landrigan [1] - 490:14	laymen's [2] - 475:17, 478:7	Libby [3] - 492:2, 492:11, 585:16	
language [1] - 452:18	leaders [1] - 490:12	license [1] - 448:6	
Lanzo [1] - 588:19	leadership [3] - 451:4, 453:8, 453:11	light [49] - 458:11, 465:24, 474:19, 477:10, 478:20, 486:19, 486:21, 486:22, 487:1, 487:3, 487:10, 487:17, 487:20,	
	leading [1] - 493:18		
	learn [1] - 501:2		
	learned [1] - 619:18		
	least [14] - 463:1, 468:16, 468:18, 469:5, 488:11, 497:13, 505:11, 542:19, 573:18, 578:5, 579:2, 585:7, 662:16, 667:11		
	leave [5] - 437:11, 446:25, 457:1, 598:10, 598:16		
	leaves [1] - 437:14		
	led [2] - 493:8, 598:7		
	Lee [14] - 454:5, 545:11, 546:2, 546:9, 597:2, 619:20, 619:23, 621:25, 622:18, 623:2, 632:1, 632:15, 650:19, 650:23		
	left [8] - 445:6, 445:21,		

633:8, 633:15, 633:21,
634:5, 634:8, 634:14,
634:18, 635:6, 635:11,
635:20, 635:22, 636:3,
636:9, 636:18, 639:11,
640:7, 640:15, 641:22,
642:6, 642:8, 642:10,
642:22, 651:4, 651:17,
652:4, 653:7, 653:20,
653:24, 664:22, 665:2
list [9] - 463:24, 470:16,
602:8, 603:24, 604:6,
659:3, 659:6, 659:10,
667:13
listed [5] - 465:9, 471:2,
476:16, 564:6, 645:21
listing [1] - 458:17
lists [3] - 463:21, 494:7,
543:19
literally [3] - 441:23,
443:11, 487:7
literature [20] - 454:13,
466:25, 471:15, 474:23,
476:9, 478:24, 489:6,
489:13, 491:19, 492:18,
492:23, 496:12, 539:9,
552:20, 639:15, 647:2,
654:21, 656:19, 663:2,
663:15
litigation [14] - 460:8,
460:13, 462:1, 462:14,
479:7, 543:20, 544:21,
547:5, 547:13, 551:23,
554:10, 591:8, 599:16,
621:22
live [2] - 440:22, 440:23
locate [1] - 529:10
located [3] - 499:12,
499:13, 499:14
LOCKE [1] - 436:9
Longo [173] - 437:11,
437:14, 437:24, 438:14,
438:18, 439:13, 440:8,
440:17, 440:19, 440:21,
440:22, 444:22, 444:23,
448:9, 460:13, 462:5,
463:10, 465:4, 465:11,
470:13, 470:19, 481:8,
482:25, 486:8, 497:18,
499:17, 505:15, 511:3,
511:4, 517:15, 519:22,
520:24, 533:12, 533:15,
534:17, 537:17, 540:10,

540:12, 542:2, 542:18,
544:18, 544:25, 545:10,
545:23, 546:11, 546:22,
547:18, 549:1, 551:25,
552:2, 552:10, 554:3,
554:5, 555:8, 556:15,
556:22, 557:12, 557:25,
558:2, 558:8, 558:23,
560:9, 561:8, 563:2,
564:1, 566:8, 567:7,
567:11, 568:1, 568:4,
568:21, 569:3, 569:12,
569:21, 571:7, 571:9,
572:15, 573:6, 573:9,
574:8, 574:24, 576:8,
577:21, 578:2, 578:18,
578:19, 579:13, 580:12,
580:19, 581:17, 582:7,
583:10, 583:20, 586:23,
587:8, 588:17, 588:20,
588:25, 589:10, 589:21,
590:2, 591:8, 592:15,
592:22, 593:7, 593:10,
594:9, 595:3, 595:9,
597:16, 597:25, 599:10,
601:6, 603:2, 603:14,
604:1, 604:10, 604:24,
606:8, 606:10, 607:4,
608:15, 611:15, 612:5,
613:8, 613:21, 614:4,
614:25, 615:9, 615:16,
615:23, 618:5, 618:13,
619:2, 621:1, 622:24,
624:7, 627:1, 627:7,
627:15, 627:25, 628:4,
629:2, 629:21, 630:10,
632:13, 637:17, 641:21,
643:19, 644:4, 644:12,
645:11, 645:16, 648:8,
650:11, 656:8, 656:15,
658:1, 659:4, 659:13,
659:15, 659:16, 660:17,
660:20, 660:21, 665:18,
667:3, 668:3, 668:6,
669:1, 669:5, 670:7
longo [3] - 482:17,
548:17, 647:14
LONGO [4] - 440:11,
486:4, 540:6, 606:4
Longo's [8] - 437:9,
437:18, 438:4, 439:1,
460:7, 499:14, 645:2,
667:23

look [61] - 440:1, 450:4,
456:15, 457:17, 459:20,
463:12, 475:22, 479:23,
485:7, 486:10, 490:4,
490:24, 502:12, 502:15,
502:23, 508:5, 511:8,
513:15, 515:8, 515:20,
523:24, 530:25, 531:4,
533:20, 535:22, 559:13,
568:3, 571:7, 571:14,
572:24, 575:4, 575:5,
575:6, 575:7, 576:16,
580:24, 582:1, 583:8,
585:2, 587:1, 593:10,
596:14, 596:24, 600:19,
601:13, 608:25, 625:21,
626:3, 634:7, 638:1,
638:11, 640:6, 645:15,
650:9, 654:24, 654:25,
664:2
looked [30] - 489:18,
495:5, 503:3, 526:11,
530:11, 530:20, 536:17,
540:18, 540:23, 557:1,
557:2, 557:7, 557:21,
561:10, 576:5, 596:13,
602:4, 602:6, 602:9,
602:12, 611:8, 625:13,
630:24, 640:10, 640:13,
640:22, 644:6, 645:16,
655:3
looking [76] - 437:24,
448:9, 455:21, 477:12,
477:13, 480:22, 486:24,
488:5, 488:8, 490:25,
491:2, 495:6, 497:17,
499:7, 499:9, 499:17,
503:9, 503:13, 504:13,
505:1, 506:10, 506:17,
506:21, 506:22, 507:1,
507:6, 509:23, 510:5,
512:8, 513:1, 513:12,
525:3, 526:5, 527:7,
532:17, 532:24, 533:15,
533:16, 534:18, 534:19,
536:12, 536:25, 541:6,
541:11, 541:21, 548:15,
567:7, 585:4, 585:17,
587:23, 587:24, 593:12,
593:16, 595:20, 595:21,
596:9, 600:3, 602:1,
603:17, 604:5, 604:6,
615:11, 621:13, 634:9,

636:21, 641:13, 642:3,
643:21, 646:8, 652:16,
655:2, 660:5, 660:19,
661:18, 663:2
looks [10] - 457:6, 470:3,
515:9, 516:3, 536:19,
554:23, 555:21, 556:1,
599:19, 628:19
loop [1] - 576:10
Los [1] - 458:24
loss [1] - 642:20
Louisville [1] - 464:16
low [2] - 628:3, 647:24
lower [9] - 469:25,
477:18, 480:19, 505:4,
564:24, 635:23, 654:10,
655:6, 662:14
lowest [2] - 560:2,
664:10
lunch [1] - 539:13
luncheon [1] - 539:17
lung [2] - 491:16, 530:16

M

ma'am [16] - 541:15,
542:12, 543:22, 544:5,
546:25, 547:20, 556:11,
558:15, 562:24, 565:15,
582:21, 591:24, 599:21,
606:19, 617:17, 618:8
magic [1] - 577:14
magical [1] - 577:12
magically [1] - 577:5
magnesium [4] - 503:20,
505:2, 506:18, 516:18
magnification [1] - 596:2
magnitude [3] - 587:9,
587:13, 600:15
Maimon [1] - 461:17
main [3] - 446:4, 522:17,
591:3
Major [1] - 441:15
major [1] - 442:1
majority [6] - 496:1,
575:8, 575:16, 575:19,
575:23, 585:15
man [3] - 453:18, 462:7,
462:8
manage [1] - 450:9
management [1] -
502:10
manager [2] - 502:10,
629:8

managing [1] - 449:3
Manbodh [1] - 557:13
mandatory [2] - 480:8, 481:3
MANGES [1] - 436:6
manipulate [1] - 647:19
manner [2] - 662:3, 662:23
manual [1] - 456:22
manufactured [3] - 457:21, 458:1, 459:5
Manville [1] - 660:10
map [1] - 515:19
March [3] - 590:11, 630:10, 630:14
mark [1] - 659:2
marked [1] - 502:8
market [1] - 516:23
MARKETING [1] - 435:4
MAS [77] - 444:24, 446:14, 455:1, 456:20, 459:7, 462:17, 462:21, 463:3, 474:22, 500:23, 504:2, 504:8, 504:10, 504:16, 504:23, 505:16, 505:17, 508:1, 508:12, 509:14, 510:19, 511:5, 514:5, 518:22, 518:23, 519:19, 520:20, 524:24, 527:15, 528:2, 528:22, 529:2, 529:12, 530:4, 530:10, 530:19, 530:22, 531:1, 531:4, 534:19, 536:12, 537:1, 537:6, 541:25, 542:22, 543:7, 543:10, 543:13, 544:19, 556:3, 557:2, 562:9, 578:22, 594:22, 597:18, 598:4, 598:10, 598:16, 611:19, 612:14, 613:9, 613:23, 613:25, 614:1, 615:1, 615:6, 618:6, 633:25, 640:13, 640:23, 641:3, 641:6, 641:18, 649:21, 650:7
MAS' [2] - 527:8, 531:11
MAS's [1] - 505:14
MAS-created [1] - 615:1
mass [1] - 634:25
Master's [2] - 441:12, 441:22
Masters [1] - 441:18
match [1] - 503:15

material [21] - 470:25, 472:12, 484:3, 488:3, 492:23, 495:17, 516:7, 584:5, 584:14, 585:8, 585:11, 585:15, 609:15, 634:24, 654:13, 655:9, 655:10, 656:8, 663:15
Material [1] - 503:17
materials [52] - 438:6, 439:3, 441:18, 441:20, 441:21, 441:23, 441:25, 442:8, 442:10, 442:12, 442:18, 442:19, 442:23, 443:3, 443:4, 443:16, 443:17, 443:21, 444:8, 444:11, 444:15, 444:25, 445:14, 446:5, 446:23, 447:7, 447:24, 448:7, 451:15, 452:22, 454:25, 456:16, 457:20, 458:20, 460:20, 461:5, 466:25, 480:18, 489:14, 494:24, 583:23, 583:25, 586:6, 586:14, 609:18, 612:2, 614:5, 615:7, 637:15, 646:20, 662:1
Materials [16] - 441:3, 441:9, 445:16, 446:12, 447:6, 451:12, 451:14, 454:23, 457:12, 458:19, 462:12, 472:24, 473:4, 474:15, 474:18, 495:12
math [1] - 530:17
matrices [2] - 524:3, 524:19
matrixes [1] - 654:8
MATTER [1] - 671:8
matter [10] - 461:24, 542:19, 544:14, 544:18, 547:17, 554:5, 554:21, 558:2, 562:5, 577:18
McCrone [10] - 443:7, 465:21, 465:25, 466:2, 466:7, 466:9, 467:8, 501:1, 501:13, 570:6
MDL [72] - 439:3, 472:25, 473:11, 473:16, 473:20, 505:15, 511:4, 527:4, 528:15, 541:18, 546:23, 549:1, 549:22, 550:12, 559:19, 560:12, 561:5, 562:5, 562:8, 562:11, 562:14, 563:4, 563:6,

565:2, 565:5, 573:15, 575:20, 576:1, 576:10, 576:11, 576:15, 590:22, 592:1, 592:13, 592:20, 592:22, 593:3, 593:9, 593:15, 597:3, 598:1, 602:1, 606:13, 607:5, 607:14, 607:25, 608:22, 612:21, 612:23, 613:22, 614:2, 614:5, 615:7, 615:16, 617:20, 622:7, 623:4, 624:15, 631:13, 639:12, 643:25, 644:14, 644:15, 648:12, 650:12, 650:20, 650:24, 655:1, 659:7, 668:14
MEAGHER [1] - 435:20
mean [8] - 453:10, 497:22, 511:23, 558:21, 569:13, 584:1, 627:20, 665:24
meaning [5] - 450:10, 452:1, 522:4, 561:8, 649:13
means [10] - 469:10, 509:15, 540:21, 541:1, 541:5, 583:20, 611:8, 611:18, 618:9, 647:23
meant [4] - 481:10, 481:13, 515:1, 657:7
measure [6] - 449:22, 488:19, 525:2, 532:5, 561:20, 577:11
measured [4] - 526:3, 532:4, 562:6, 562:17
measurement [3] - 508:8, 513:18, 562:21
measurements [4] - 450:23, 470:12, 512:14, 512:23
measures [1] - 581:19
measuring [1] - 513:19
mechanical [2] - 442:11, 450:21
medicine [1] - 490:15
meet [13] - 470:20, 500:12, 517:18, 517:21, 517:23, 518:13, 531:25, 577:7, 594:3, 648:4, 648:5, 662:1
meeting [2] - 453:21, 533:6
meetings [1] - 542:13

meets [17] - 468:6, 500:2, 511:20, 532:14, 533:22, 534:7, 534:21, 536:22, 568:17, 577:15, 578:10, 579:4, 580:2, 582:15, 594:6, 594:12, 646:23
membership [1] - 452:11
memo [2] - 479:25, 482:7
mentioned [9] - 444:12, 461:9, 511:8, 551:25, 552:25, 557:17, 624:8, 629:24, 634:10
met [10] - 524:4, 524:18, 534:24, 579:11, 579:17, 665:21, 666:9, 666:22, 667:4, 667:23
metal [2] - 442:4, 442:15
metallurgy [1] - 442:1
metals [2] - 442:1, 447:13
meter [2] - 468:22, 468:23
Method [1] - 476:6
method [236] - 439:11, 439:14, 449:6, 449:18, 449:20, 450:4, 450:23, 451:1, 451:6, 451:19, 451:20, 451:22, 451:24, 452:18, 452:21, 453:12, 453:13, 468:13, 468:14, 475:10, 475:17, 475:25, 476:4, 476:22, 477:1, 478:17, 478:22, 479:10, 479:17, 479:20, 480:3, 480:12, 481:3, 481:12, 481:18, 482:6, 482:18, 482:21, 483:4, 483:6, 483:7, 483:9, 483:10, 483:16, 483:18, 483:21, 483:22, 484:3, 486:9, 486:11, 486:13, 487:6, 489:7, 491:9, 492:14, 493:8, 493:13, 493:16, 493:22, 493:25, 494:9, 494:12, 494:14, 494:16, 494:19, 494:20, 494:21, 494:22, 494:23, 494:25, 495:2, 495:18, 497:15, 499:19, 502:25, 504:5, 504:10, 505:7, 506:7, 506:9, 507:3, 507:19, 507:23, 508:1, 508:6,

509:10, 511:9, 513:7,
513:8, 513:13, 513:15,
513:22, 515:7, 518:24,
519:8, 519:9, 519:17,
520:1, 520:2, 520:5,
522:14, 522:15, 522:21,
524:17, 527:23, 529:16,
532:4, 532:6, 532:15,
534:23, 535:14, 537:4,
537:7, 545:5, 545:7,
545:12, 546:3, 547:2,
547:6, 547:10, 547:14,
547:17, 547:18, 547:20,
547:21, 548:1, 548:4,
548:6, 548:11, 548:19,
548:23, 550:11, 550:12,
551:8, 551:19, 580:19,
580:25, 581:2, 581:10,
589:1, 589:10, 589:12,
589:14, 589:16, 589:20,
589:22, 591:7, 591:12,
591:25, 592:1, 592:5,
592:6, 592:8, 606:19,
607:3, 607:10, 607:12,
607:16, 608:3, 608:10,
609:4, 609:11, 609:13,
609:16, 610:2, 610:9,
610:18, 610:19, 615:24,
617:4, 617:18, 617:21,
617:24, 618:2, 618:3,
618:10, 618:14, 619:9,
619:21, 620:1, 620:7,
620:16, 620:24, 623:15,
633:5, 633:13, 635:19,
636:9, 637:6, 637:22,
638:5, 638:9, 638:11,
638:15, 638:16, 638:21,
638:22, 638:23, 639:7,
639:19, 640:10, 641:16,
642:15, 643:8, 646:17,
648:10, 648:11, 648:17,
649:6, 649:18, 651:4,
651:7, 651:23, 652:3,
652:6, 652:8, 652:9,
652:12, 652:16, 653:1,
653:21, 662:20, 662:21,
663:5, 663:6, 663:10,
664:21, 664:23, 665:2,
665:3, 665:21, 666:9
methodologies [3] -
448:24, 464:8, 530:5
methodology [27] -
439:8, 448:13, 537:25,

544:23, 545:6, 545:17,
549:3, 549:10, 568:17,
573:8, 573:11, 577:7,
578:11, 586:20, 586:24,
587:19, 589:19, 590:21,
592:21, 594:7, 640:16,
647:17, 657:24, 658:2,
663:8, 667:1
methods [75] - 452:25,
458:10, 461:24, 462:2,
462:23, 468:3, 468:8,
468:9, 469:18, 474:15,
474:19, 474:22, 475:1,
480:10, 483:13, 485:13,
487:25, 489:25, 491:20,
492:13, 493:7, 495:11,
496:22, 496:24, 498:13,
516:13, 518:21, 519:7,
522:2, 523:4, 523:10,
523:16, 524:2, 524:8,
524:14, 531:20, 535:16,
542:15, 545:2, 549:1,
549:10, 549:19, 550:19,
550:21, 551:6, 551:10,
551:11, 551:21, 604:18,
607:1, 607:11, 608:1,
619:19, 637:12, 640:9,
640:15, 643:7, 645:11,
645:13, 646:2, 647:7,
647:10, 648:3, 649:22,
651:22, 652:10, 652:13,
653:12, 653:24, 661:6,
662:15, 664:9, 664:17,
665:7, 666:10
Michael [3] - 454:16,
454:17, 454:20
MICHELLE [1] - 435:12
Microanalytical [3] -
444:14, 445:1, 445:21
microbiologists [1] -
446:22
microbiology [1] -
441:15
microchemistry [1] -
487:15
micrograph [1] - 533:21
micrometer [3] - 469:1,
488:11, 534:5
micrometers [13] -
470:1, 470:2, 470:9,
499:22, 499:25, 511:24,
516:6, 534:2, 534:3,
535:1, 578:6, 579:2

micron [3] - 468:20,
468:21, 468:25
Micronite [1] - 489:9
microns [9] - 468:17,
469:6, 497:13, 533:2,
533:22, 533:23, 573:18,
574:19, 645:23
microphone [2] - 582:8,
595:24
microscope [33] -
443:18, 443:23, 444:17,
452:23, 463:3, 474:19,
474:21, 475:19, 475:23,
530:19, 540:18, 540:24,
541:7, 541:11, 541:22,
542:4, 595:16, 596:10,
596:13, 596:17, 599:12,
600:3, 623:15, 629:13,
634:8, 634:19, 634:20,
642:11, 642:12, 647:22
microscopes [6] -
443:22, 446:17, 446:18,
486:15, 631:4
microscopic [6] -
459:22, 488:2, 522:19,
522:24, 647:20, 661:25
microscopically [1] -
459:22
microscopist [2] - 447:3,
620:9
microscopists [5] -
447:1, 449:6, 466:1,
493:18, 632:15
microscopists' [1] -
495:24
microscopy [62] - 443:8,
443:10, 444:2, 444:5,
456:3, 458:9, 458:11,
459:13, 462:23, 465:24,
477:10, 478:20, 478:21,
486:19, 487:9, 487:10,
487:20, 489:19, 491:21,
496:23, 497:16, 501:2,
529:15, 530:18, 531:13,
531:15, 531:21, 533:1,
533:5, 533:8, 534:20,
535:15, 536:14, 536:19,
537:3, 537:6, 537:12,
588:21, 592:7, 607:12,
617:1, 632:21, 632:23,
633:2, 633:4, 633:15,
633:21, 634:15, 635:5,
636:16, 639:10, 640:2,

640:3, 641:22, 647:10,
649:23, 653:8, 662:7,
662:12, 662:21
middle [1] - 509:1
might [5] - 476:1, 517:14,
522:22, 574:22, 622:8
miles [1] - 598:13
Millete [2] - 496:11,
582:4
Millette [2] - 454:12,
656:22
milligrams [1] - 516:8
millimeters [1] - 516:2
million [8] - 462:7, 462:8,
462:13, 462:14, 463:6,
468:24, 543:6, 543:15
millionth [1] - 468:22
millionths [2] - 560:7,
587:10
mind [2] - 509:18, 567:4
mine [7] - 492:11,
503:22, 523:12, 539:5,
587:25, 594:2
mined [4] - 472:5,
472:10, 492:8, 521:22
mineral [21] - 444:5,
467:6, 467:17, 468:6,
472:4, 479:4, 480:15,
488:20, 492:1, 492:2,
492:8, 492:19, 503:2,
503:11, 504:21, 522:6,
570:6, 572:12, 589:4,
637:9, 646:3
mineralogist [3] -
472:18, 501:21, 646:20
mineralogists [1] -
507:21
Minerals [1] - 465:14
minerals [45] - 442:2,
458:15, 465:17, 465:18,
465:20, 465:24, 466:11,
466:13, 466:15, 466:20,
467:3, 468:1, 472:6,
477:21, 477:22, 478:9,
479:5, 481:19, 481:24,
481:25, 482:3, 486:24,
491:15, 491:22, 496:2,
514:10, 514:12, 547:23,
556:19, 568:10, 571:3,
571:16, 571:20, 572:12,
572:17, 574:17, 580:15,
580:22, 581:7, 581:8,
581:14, 585:12, 585:18,

<p>585:21 Mines [1] - 496:19 mines [4] - 454:10, 472:11, 537:22, 539:7 miniature [1] - 516:4 minimum [1] - 574:18 Minor [1] - 441:15 minus [1] - 525:13 minute [4] - 460:7, 536:9, 593:24, 597:10 minutes [9] - 437:23, 460:3, 523:24, 536:10, 592:12, 597:13, 632:14, 634:4, 666:4 mishear [1] - 636:5 miss [1] - 548:19 missed [1] - 647:3 missing [1] - 510:12 Missouri [1] - 464:13 misunderstood [1] - 569:11 mix [3] - 442:3, 477:15, 565:22 mixed [2] - 567:15, 611:25 mixing [3] - 565:19, 565:25, 566:17 modern [1] - 639:23 modernize [1] - 638:13 modernizing [1] - 638:1 modifications [1] - 494:14 modified [8] - 463:1, 550:16, 550:17, 590:10, 591:9, 591:25, 592:4, 592:11 mold [1] - 456:6 moment [2] - 517:13, 608:6 money [1] - 543:13 monitor [4] - 613:1, 613:5, 621:13, 630:9 monograph [3] - 638:2, 638:14, 638:16 Monograph [2] - 546:12, 546:23 Monokote [2] - 458:5, 585:14 Montana [3] - 492:2, 492:11, 585:16 month [2] - 438:15, 501:14 months [5] - 443:12,</p>	<p>452:16, 553:20, 565:13, 622:3 Moore [1] - 564:3 Moore's [1] - 564:11 morning [22] - 437:6, 437:20, 438:23, 440:17, 440:18, 540:17, 541:3, 543:6, 544:9, 544:24, 547:16, 551:25, 552:25, 569:22, 570:2, 573:24, 574:3, 590:9, 625:13, 653:19, 656:4, 666:5 morphology [31] - 488:7, 489:18, 490:25, 493:10, 495:7, 495:14, 496:25, 499:21, 500:3, 500:4, 500:13, 502:17, 514:16, 515:1, 516:24, 517:19, 518:13, 519:16, 531:4, 545:6, 549:4, 551:12, 573:12, 574:7, 582:16, 645:21, 648:4, 648:18, 648:23, 649:15 Moshe [1] - 461:17 most [18] - 452:19, 462:21, 464:23, 478:2, 478:4, 481:4, 497:15, 499:23, 521:4, 537:16, 542:10, 548:14, 554:2, 577:16, 582:2, 631:1, 642:12, 664:23 MOTLEY [1] - 435:13 Mount [2] - 490:5, 490:15 mouth [1] - 470:5 move [10] - 472:22, 474:25, 483:5, 487:2, 523:20, 588:7, 592:15, 651:1, 656:5, 659:25 moved [1] - 576:7 movement [1] - 529:9 moving [1] - 621:14 MR [57] - 437:15, 438:23, 440:6, 440:16, 460:6, 464:20, 464:23, 465:3, 470:17, 471:11, 472:1, 472:3, 472:23, 481:14, 481:17, 486:7, 499:6, 499:13, 523:25, 536:8, 536:11, 538:5, 538:7, 538:20, 538:22, 539:11, 550:24, 589:5, 597:8, 597:12, 605:3, 632:12, 636:12, 636:14, 637:5,</p>	<p>637:16, 644:5, 644:11, 651:2, 651:16, 656:1, 656:7, 657:7, 657:13, 657:25, 659:2, 659:4, 659:14, 660:1, 660:15, 660:16, 665:17, 666:4, 666:8, 667:19, 668:2, 669:1 MS [56] - 437:8, 437:20, 440:5, 470:14, 470:23, 471:5, 472:16, 481:8, 482:24, 484:17, 537:23, 538:13, 540:9, 545:20, 545:22, 551:2, 551:4, 552:1, 557:11, 561:25, 562:3, 563:1, 567:6, 568:19, 568:25, 569:2, 578:15, 578:17, 588:15, 588:17, 589:7, 589:9, 597:5, 597:15, 605:7, 606:7, 612:18, 614:23, 632:8, 643:25, 645:1, 645:7, 650:22, 651:12, 655:20, 657:3, 657:9, 657:19, 658:25, 659:3, 659:6, 661:7, 665:11, 665:15, 665:24, 667:12 multiple [4] - 446:16, 446:17, 449:24, 641:13 municipalities [3] - 457:11, 458:18, 460:14 municipality [1] - 552:7 must [2] - 572:12, 572:13 MVA [1] - 501:13 MY [1] - 671:7 myth [1] - 558:17</p>	<p>N</p> <p>Nadia [1] - 564:3 name [5] - 437:15, 440:19, 465:18, 502:8, 650:12 named [2] - 454:8, 460:15 narrow [1] - 538:20 NASA [3] - 459:8, 459:16, 552:7 NATHAN [1] - 435:14 National [6] - 455:3, 455:5, 459:11, 476:12, 603:8, 661:22 nature [5] - 558:24, 567:17, 646:15, 661:4</p>	<p>near [2] - 587:5, 609:4 necessary [2] - 580:20, 581:13 need [9] - 441:7, 442:15, 472:5, 472:15, 505:9, 521:24, 596:15, 638:13, 661:3 needed [1] - 442:10 needle [2] - 576:7, 642:3 needles [1] - 532:21 negative [3] - 452:14, 629:11, 639:13 negatives [2] - 453:21, 453:22 negotiation [1] - 522:18 never [15] - 472:19, 494:19, 494:20, 540:12, 541:16, 544:19, 547:5, 547:13, 552:14, 556:18, 577:5, 585:23, 599:4, 603:22, 636:2 nevertheless [1] - 581:17 New [10] - 457:14, 457:24, 458:21, 464:13, 464:14, 464:21, 465:2 NEW [5] - 435:1, 435:14, 435:16, 435:18, 435:19 new [6] - 441:25, 442:18, 447:19, 452:16, 501:13, 667:21 next [28] - 453:21, 464:3, 467:8, 481:14, 485:20, 496:10, 500:10, 503:5, 509:22, 510:10, 523:19, 525:6, 525:7, 525:24, 531:2, 532:24, 539:18, 560:6, 570:9, 594:21, 598:25, 599:7, 605:13, 628:17, 628:20, 644:20, 653:1 nickname [1] - 454:11 NIH [1] - 459:8 nine [1] - 529:2 NIST [1] - 455:5 nitrogen [1] - 482:13 NJ [1] - 435:7 NO [1] - 435:2 nobody [1] - 532:6 non [50] - 467:21, 467:22, 467:23, 507:13, 517:15, 517:17, 517:23, 517:25, 518:12, 518:19,</p>
---	---	--	--	--

<p>519:5, 560:14, 560:18, 568:11, 569:19, 571:3, 571:16, 571:20, 572:17, 574:9, 574:16, 575:1, 576:24, 577:5, 577:9, 577:22, 577:24, 578:3, 578:24, 579:22, 580:4, 580:21, 581:11, 581:14, 587:22, 588:3, 588:10, 588:14, 588:23, 589:3, 589:13, 590:2, 593:21, 649:10, 649:13, 649:15, 649:17</p> <p>non-asbestiform [26] - 568:11, 569:19, 571:3, 571:16, 572:17, 574:9, 574:16, 575:1, 576:24, 577:5, 577:9, 578:3, 578:24, 579:22, 580:4, 580:21, 581:11, 581:14, 587:22, 588:3, 588:10, 588:14, 588:23, 590:2, 593:21</p> <p>non-asbestos [17] - 517:15, 517:17, 517:23, 517:25, 518:12, 518:19, 519:5, 571:20, 577:22, 577:24, 589:3, 589:13, 649:10, 649:13, 649:15, 649:17</p> <p>non-detect [2] - 560:14, 560:18</p> <p>non-fibrous [4] - 467:21, 467:22, 467:23</p> <p>nonasbestos [6] - 458:15, 492:1, 496:1, 496:21, 579:10, 579:18</p> <p>noncommercial [2] - 521:19, 521:20</p> <p>nondetect [2] - 529:22, 644:1</p> <p>nondetected [1] - 638:25</p> <p>none [8] - 542:3, 542:7, 550:21, 552:10, 552:17, 559:8, 623:12, 630:23</p> <p>nonscientists [1] - 452:14</p> <p>noon [1] - 523:22</p> <p>normal [1] - 666:17</p> <p>North [1] - 446:5</p> <p>northeast [1] - 535:10</p> <p>note [5] - 463:10, 464:12, 498:3, 498:10, 576:23</p>	<p>notebook [7] - 463:11, 473:1, 497:9, 499:14, 505:14, 514:18, 660:18</p> <p>NOTES [1] - 671:7</p> <p>nothing [4] - 469:12, 537:24, 643:11, 656:12</p> <p>notice [1] - 457:5</p> <p>notion [1] - 532:16</p> <p>November [1] - 631:16</p> <p>nowadays [2] - 542:2, 542:7</p> <p>nowhere [1] - 587:5</p> <p>number [25] - 438:2, 438:12, 448:3, 452:4, 456:18, 456:21, 457:8, 462:10, 479:14, 519:25, 530:6, 530:15, 538:15, 553:1, 559:20, 566:1, 567:10, 576:13, 589:6, 593:2, 601:15, 607:14, 622:3, 627:13</p> <p>numbered [1] - 499:16</p> <p>numerical [3] - 504:3, 505:21, 506:21</p> <p>numerous [1] - 587:25</p> <p>NVLAP [8] - 455:3, 455:11, 603:10, 603:25, 667:4, 667:9, 668:3, 668:17</p> <p>NVLAPs [1] - 667:20</p>	<p>observe [1] - 612:13</p> <p>observed [2] - 505:12, 611:4</p> <p>obtain [4] - 444:8, 455:10, 456:20, 457:8</p> <p>obtained [1] - 503:15</p> <p>obtaining [1] - 453:24</p> <p>occasion [1] - 525:20</p> <p>occasions [3] - 464:3, 465:5, 555:21</p> <p>occupants [1] - 494:3</p> <p>Occupational [1] - 661:23</p> <p>occupational [1] - 490:14</p> <p>occur [3] - 492:25, 568:10, 581:7</p> <p>occurring [1] - 532:11</p> <p>October [3] - 443:12, 568:21, 568:23</p> <p>OF [2] - 435:1, 671:7</p> <p>office [3] - 446:15, 448:19, 463:24</p> <p>offices [1] - 446:8</p> <p>OFFICIAL [1] - 435:25</p> <p>official [1] - 494:21</p> <p>often [6] - 492:19, 542:6, 542:9, 555:13, 616:2, 663:16</p> <p>Oklahoma [1] - 464:13</p> <p>old [5] - 438:9, 483:1, 549:12, 598:12, 629:25</p> <p>older [1] - 463:8</p> <p>Olsen [2] - 578:20, 579:14</p> <p>once [12] - 457:22, 486:13, 488:18, 494:2, 542:17, 542:18, 542:20, 601:21, 604:7, 604:8, 611:25, 644:5</p> <p>one [125] - 437:9, 439:9, 443:22, 446:2, 447:11, 449:8, 449:15, 452:14, 452:19, 452:25, 459:14, 461:17, 463:6, 465:1, 466:1, 467:12, 468:21, 469:2, 473:11, 479:23, 480:14, 482:11, 489:24, 491:11, 492:12, 493:11, 497:25, 500:15, 500:25, 503:5, 504:1, 505:11, 507:10, 509:14, 509:22, 510:12, 515:8, 516:5,</p>	<p>517:18, 517:21, 517:23, 519:23, 520:7, 520:13, 521:23, 524:10, 525:20, 526:8, 529:7, 529:10, 533:18, 534:4, 535:1, 535:3, 535:7, 538:15, 543:22, 544:3, 547:24, 550:10, 551:5, 553:13, 555:12, 556:25, 568:14, 569:6, 569:7, 570:1, 570:10, 572:12, 576:7, 576:18, 578:2, 578:23, 579:16, 580:12, 594:21, 595:3, 596:4, 596:5, 596:6, 597:17, 597:21, 598:25, 599:6, 599:10, 599:18, 601:18, 601:19, 601:21, 602:5, 604:12, 608:3, 608:13, 608:22, 614:10, 615:23, 616:6, 621:2, 621:8, 621:24, 622:11, 622:13, 622:19, 623:3, 625:8, 625:23, 626:11, 626:21, 628:13, 631:5, 631:6, 631:15, 640:9, 640:14, 641:9, 641:16, 650:1, 653:25, 655:7, 655:8, 658:1</p> <p>ones [10] - 460:15, 463:5, 463:8, 546:9, 575:10, 629:5, 643:17, 643:18, 644:16, 644:20</p> <p>open [2] - 437:3, 478:23</p> <p>opened [3] - 443:12, 445:20, 542:22</p> <p>opening [6] - 516:10, 529:11, 599:3, 602:8, 602:9, 641:9</p> <p>openings [4] - 516:5, 525:4, 596:24, 641:14</p> <p>opinion [18] - 452:19, 465:25, 496:6, 518:20, 527:21, 560:20, 561:2, 562:13, 567:17, 594:9, 594:13, 606:16, 606:20, 606:24, 655:23, 655:25, 657:20, 657:24</p> <p>opinions [9] - 448:20, 472:17, 496:16, 539:2, 552:17, 558:25, 559:2, 656:16, 656:19</p> <p>opportunity [1] - 659:12</p> <p>opposed [2] - 483:4,</p>
O			
<p>O'DELL [2] - 435:11, 471:5</p> <p>O'Dell [1] - 470:19</p> <p>oath [4] - 541:17, 556:2, 556:18, 566:21</p> <p>object [8] - 481:8, 484:17, 650:22, 655:20, 659:7, 666:1, 667:12, 667:17</p> <p>objected [1] - 659:10</p> <p>objection [16] - 470:14, 470:21, 471:7, 471:8, 472:16, 482:24, 537:23, 538:13, 551:1, 567:19, 605:3, 651:12, 657:3, 657:19, 658:25, 665:11</p> <p>objective [2] - 620:19, 642:2</p> <p>obscuring [1] - 653:14</p> <p>observations [1] - 495:24</p>			

<p>491:23 opposing [1] - 461:14 optical [7] - 446:18, 447:1, 480:10, 533:21, 624:4, 647:22, 662:11 optics [1] - 632:1 optimal [1] - 484:11 optimum [7] - 485:1, 634:24, 635:5, 635:14, 640:10, 640:14, 641:16 Optimum [1] - 485:5 option [1] - 537:15 Orden [2] - 454:3, 454:5 order [7] - 467:10, 480:2, 481:3, 514:5, 523:3, 648:16, 661:5 orders [3] - 587:9, 587:13, 600:15 ore [1] - 482:22 organic [8] - 446:20, 446:25, 447:14, 447:18, 447:20, 456:5, 456:14, 456:15 organics [1] - 447:13 organization [1] - 571:24 Organization [4] - 439:16, 456:9, 483:8, 495:13 orient [6] - 563:10, 587:19, 593:19, 606:25, 613:8, 626:12 orientation [1] - 535:11 original [11] - 546:1, 550:9, 550:11, 550:15, 590:6, 591:21, 592:16, 593:3, 593:8, 594:16, 607:22 originally [1] - 659:11 OSHA [20] - 516:21, 516:22, 517:2, 563:10, 563:15, 563:18, 563:23, 571:24, 572:2, 572:5, 572:10, 572:15, 572:20, 572:25, 573:1, 638:18, 663:21, 663:22, 663:24 OSHA's [2] - 516:25, 563:7 ourselves [2] - 626:12, 644:25 outline [1] - 571:23 outlined [3] - 513:6, 645:20, 653:12 outside [15] - 440:24,</p>	<p>440:25, 446:4, 447:25, 472:17, 481:12, 483:2, 513:22, 519:17, 586:19, 596:20, 652:8, 658:7, 658:11, 658:20 outside-of-court [1] - 658:20 outstanding [1] - 598:17 overall [2] - 452:11, 516:2 overbroad [1] - 538:2 overstepping [1] - 439:24 overview [2] - 459:10, 559:14 overwhelming [4] - 575:8, 575:15, 575:19, 575:23 own [18] - 438:7, 460:11, 482:19, 501:15, 513:13, 513:22, 519:8, 519:9, 520:1, 528:12, 539:6, 541:14, 543:10, 631:18, 643:9, 649:5, 658:10, 658:19 owned [1] - 459:2</p>	<p>652:21 panning [1] - 480:15 paper [4] - 482:12, 493:4, 523:13, 591:9 papers [1] - 552:14 parallel [15] - 469:4, 469:7, 488:12, 488:15, 497:12, 497:19, 500:2, 532:10, 532:13, 536:3, 573:17, 574:20, 578:4, 578:25, 645:24 parenthetical [1] - 448:10 PARFITT [1] - 435:12 part [25] - 439:2, 443:19, 470:20, 473:15, 476:12, 476:13, 498:3, 522:4, 523:15, 532:18, 533:19, 545:4, 545:15, 548:4, 572:21, 574:6, 585:19, 601:1, 604:3, 616:6, 618:20, 623:25, 646:1, 656:21, 660:2 participated [1] - 497:3 participating [1] - 455:16 Particle [3] - 465:21, 467:8, 570:7 particle [10] - 466:2, 497:19, 498:16, 511:24, 518:7, 527:20, 581:21, 588:23, 648:16, 666:11 particles [16] - 477:2, 477:4, 496:2, 574:18, 575:20, 575:23, 576:2, 576:13, 577:16, 577:25, 629:22, 647:25, 648:3, 648:9, 653:13, 653:15 particular [21] - 438:10, 439:25, 449:17, 465:17, 466:13, 467:3, 471:7, 483:15, 484:9, 488:21, 492:6, 510:16, 535:1, 539:7, 572:15, 589:14, 594:2, 594:3, 619:15, 620:12, 620:13 particularly [5] - 477:25, 502:7, 629:5, 642:21, 653:6 particulates [2] - 444:5, 611:12 partners [1] - 461:17 partnership [1] - 445:22 party [2] - 622:14, 622:17</p>	<p>passed [2] - 454:19, 455:13 past [13] - 500:10, 542:20, 560:21, 562:19, 564:21, 565:7, 566:3, 578:1, 587:23, 603:21, 613:13, 617:7, 629:25 pattern [16] - 507:9, 507:25, 508:7, 508:8, 508:20, 510:25, 511:13, 512:2, 512:4, 513:24, 513:25, 517:20, 518:3, 518:6, 646:9 patterns [8] - 507:14, 508:9, 510:1, 510:5, 513:3, 513:19, 578:13, 649:14 Paul [2] - 610:22, 620:22 pause [2] - 440:9, 517:13 Pause [1] - 645:9 payroll [1] - 462:18 PCM [4] - 456:4, 662:2, 662:6, 662:11 peak [1] - 503:20 peaks [2] - 506:19, 506:22 Peer [3] - 448:10, 449:8, 449:10 peer [22] - 448:12, 448:16, 452:19, 463:14, 471:15, 474:23, 476:8, 476:21, 489:5, 491:19, 492:18, 492:22, 496:11, 552:19, 642:17, 647:1, 647:3, 654:20, 656:18, 663:1, 663:9, 663:14 peer-reviewed [16] - 452:19, 463:14, 471:15, 474:23, 476:8, 476:21, 489:5, 491:19, 492:18, 492:22, 496:11, 642:17, 647:1, 654:20, 663:1, 663:14 PEL [4] - 563:18, 563:23, 663:21, 663:24 penetrate [1] - 518:4 penny [1] - 469:23 people [18] - 444:19, 446:3, 446:13, 446:22, 447:5, 460:25, 467:1, 497:2, 502:5, 541:13, 541:25, 545:7, 546:2, 554:6, 557:16, 583:18,</p>
	<p>P</p>		
	<p>p.m [1] - 669:8 packet [1] - 627:7 Page [1] - 670:4 page [30] - 452:3, 452:7, 484:1, 485:8, 485:20, 486:10, 488:5, 499:16, 504:13, 508:5, 509:2, 511:4, 520:11, 532:24, 539:18, 545:24, 557:14, 564:12, 567:11, 568:22, 568:24, 571:8, 578:21, 581:1, 588:19, 589:7, 605:13, 612:22, 645:2, 661:18 paid [2] - 544:20, 544:25 paired [3] - 590:10, 591:20, 591:22 Palmolive [1] - 660:11 pan [1] - 480:17 Panarello [2] - 612:14, 612:25 panel [7] - 449:5, 495:23, 664:3, 664:8, 664:12, 664:15, 665:4 Panel [3] - 449:9, 449:10,</p>		

<p>598:10, 604:15 people's [1] - 657:5 per [21] - 449:23, 505:12, 512:7, 530:2, 530:3, 530:7, 530:13, 530:14, 530:15, 563:18, 573:19, 583:25, 592:6, 599:3, 601:7, 624:18, 655:4, 655:14, 657:14 percent [76] - 492:20, 492:24, 521:7, 521:12, 521:13, 521:14, 525:13, 525:14, 526:2, 526:8, 526:14, 526:16, 526:23, 527:16, 537:1, 537:2, 537:8, 543:10, 544:14, 550:4, 559:17, 559:22, 559:25, 560:4, 560:7, 560:14, 566:5, 566:7, 566:8, 566:11, 566:14, 566:22, 566:24, 567:1, 584:1, 584:4, 585:8, 587:5, 587:6, 587:7, 587:10, 587:12, 592:17, 592:23, 593:1, 597:2, 600:13, 602:17, 602:18, 602:19, 602:25, 603:15, 603:18, 603:25, 604:25, 605:2, 611:6, 611:11, 611:15, 611:21, 612:2, 615:1, 615:4, 615:6, 615:18, 633:24, 633:25, 639:24, 640:21, 641:2, 654:11, 663:17, 667:11, 668:22, 668:25 percentage [6] - 525:25, 559:11, 610:11, 612:15, 633:22, 641:1 percentage-wise [1] - 641:1 percentages [4] - 613:15, 614:8, 614:18, 640:20 perform [8] - 488:19, 489:1, 490:20, 500:23, 507:20, 516:24, 517:7, 517:8 performed [2] - 508:2, 617:9 perhaps [1] - 437:11 period [7] - 450:9, 460:2, 501:14, 567:14, 622:12, 628:16, 668:12</p>	<p>periods [1] - 461:7 permissible [1] - 563:7 Permissible [1] - 563:12 permission [6] - 545:20, 557:11, 568:19, 578:15, 588:15, 612:18 permit [1] - 667:24 perpendicular [1] - 536:2 person [13] - 445:4, 481:9, 481:13, 540:18, 540:21, 541:1, 541:5, 565:8, 565:24, 566:17, 567:15, 596:13, 596:16 person's [1] - 655:17 Personal [1] - 436:10 personal [2] - 438:8, 444:25 personally [3] - 502:4, 540:12, 612:5 pertains [1] - 651:14 petrographics [1] - 613:14 Ph.D [5] - 441:19, 441:22, 443:13, 444:8, 444:13 Ph.D. [1] - 441:13 pharmaceutical [1] - 448:2 phase [3] - 443:8, 456:3, 662:6 Philip [1] - 490:14 Phoenix [1] - 446:7 photograph [1] - 599:25 photographs [2] - 534:10, 620:17 physicists [1] - 446:23 physics [1] - 501:24 pick [3] - 548:1, 548:6, 607:19 picked [1] - 495:20 picture [8] - 535:18, 536:17, 594:16, 594:18, 594:21, 594:25, 595:4, 595:6 pictures [3] - 535:3, 593:8, 593:9 piece [6] - 442:22, 442:23, 523:12, 569:18, 577:6, 620:12 pieces [5] - 443:1, 574:10, 577:10, 577:13, 577:22 pier [1] - 489:13</p>	<p>pier-reviewed [1] - 489:13 pipe [1] - 521:23 places [1] - 607:15 plaintiff [1] - 555:24 plaintiff's [1] - 543:19 Plaintiffs [2] - 435:16, 437:17 plaintiffs [14] - 438:6, 440:12, 461:20, 461:21, 462:1, 462:13, 544:21, 545:1, 545:12, 547:13, 550:5, 555:2, 555:15, 608:8 plaintiffs' [6] - 543:7, 544:16, 550:2, 554:10, 555:18, 590:15 Plaintiffs' [4] - 637:13, 637:17, 662:18, 664:2 plane [2] - 595:25, 596:9 plaster [1] - 491:16 plasters [1] - 457:18 plastic [3] - 447:21, 521:23, 585:21 plastics [1] - 442:2 play [4] - 583:21, 586:4, 586:17, 586:22 PLM [76] - 458:12, 475:12, 475:16, 487:9, 500:23, 500:25, 501:8, 501:21, 502:11, 522:14, 523:15, 532:18, 532:20, 535:20, 536:25, 549:12, 549:17, 578:10, 586:8, 591:15, 591:21, 592:7, 592:9, 606:11, 606:14, 606:17, 606:20, 606:24, 607:5, 607:7, 607:15, 607:25, 610:9, 610:22, 610:24, 614:8, 614:14, 615:11, 617:1, 617:4, 618:7, 618:14, 619:11, 620:1, 620:7, 624:15, 624:22, 625:9, 626:16, 627:8, 627:9, 627:11, 627:21, 628:25, 629:4, 629:23, 632:20, 633:1, 633:16, 634:3, 634:4, 634:19, 635:10, 636:8, 637:2, 642:6, 642:8, 644:2, 644:13, 645:3, 654:11, 662:9, 662:21 PLMs [2] - 625:21, 626:4</p>	<p>plug [2] - 482:11, 482:15 plunger [1] - 482:1 plus [5] - 525:12, 549:17, 550:16, 591:25, 592:11 point [22] - 439:19, 457:1, 471:3, 500:25, 502:7, 563:17, 575:12, 576:7, 609:8, 609:11, 609:14, 609:17, 609:21, 609:24, 609:25, 610:1, 610:2, 610:5, 610:18, 610:20, 631:3, 631:22 pointed [4] - 574:3, 581:25, 582:4, 582:5 pointer [1] - 469:13 pointing [1] - 509:1 poking [1] - 515:10 polarized [44] - 458:11, 465:24, 474:19, 477:10, 478:20, 486:19, 487:3, 487:9, 487:20, 491:21, 501:2, 530:18, 531:12, 531:14, 531:21, 532:25, 533:5, 533:8, 534:20, 535:15, 536:13, 536:19, 537:3, 537:6, 537:12, 607:11, 616:25, 623:14, 632:20, 632:23, 633:1, 633:4, 633:14, 633:21, 635:5, 636:16, 639:10, 640:1, 640:3, 641:22, 642:11, 649:22, 653:8, 662:12 polarizers [1] - 486:21 polars [4] - 535:13, 535:19, 535:22 policies [1] - 661:15 policy [1] - 598:9 polymer [1] - 442:5 polymers [1] - 442:2 population [7] - 579:8, 580:7, 587:25, 593:25, 594:2, 594:7, 594:8 Port [1] - 457:14 portion [4] - 482:2, 492:2, 545:5, 545:16 portions [3] - 453:3, 453:4, 551:24 portray [1] - 558:19 posed [1] - 566:16 posited [1] - 622:11 position [1] - 661:20 positive [7] - 562:17,</p>
---	--	---	--

<p>611:3, 623:11, 629:10, 631:5, 639:23, 640:1 positives [2] - 537:10, 640:20 possible [2] - 561:9, 622:22 potential [5] - 476:1, 477:3, 555:14, 563:17, 664:9 potentially [4] - 500:5, 555:19, 654:3, 654:13 pour [1] - 480:19 POWDER [1] - 435:4 Powder [13] - 472:14, 473:5, 499:7, 531:1, 535:20, 600:9, 600:16, 611:23, 615:21, 654:25, 655:9, 655:15, 656:18 powder [12] - 466:19, 472:14, 528:13, 552:23, 557:19, 557:24, 560:21, 574:5, 615:14, 656:13, 656:14, 656:23 powdery [2] - 655:16, 655:19 PowerPoint [5] - 437:23, 438:14, 534:16, 534:17, 584:24 Poye [28] - 545:11, 546:2, 597:2, 616:10, 616:13, 616:19, 616:20, 616:24, 617:3, 617:6, 617:13, 617:15, 617:21, 618:5, 618:13, 619:3, 619:6, 619:23, 619:25, 620:11, 623:5, 623:10, 624:12, 624:23, 628:12, 629:6, 631:17, 632:15 Poye's [16] - 618:10, 619:11, 619:20, 621:4, 621:25, 622:18, 623:19, 623:25, 624:10, 624:20, 625:2, 628:5, 629:10, 630:18, 630:23, 632:2 practice [1] - 442:9 PRACTICES [1] - 435:5 preamble [4] - 494:10, 495:15, 497:8, 664:1 precise [1] - 459:18 prep [1] - 529:16 preparation [20] - 439:10, 475:10, 475:15, 475:17, 476:4, 478:22,</p>	<p>479:10, 480:3, 486:11, 486:13, 540:22, 541:10, 550:18, 551:15, 551:24, 553:12, 590:10, 591:21, 592:9, 634:23 preparation/ concentration [1] - 664:16 prepare [1] - 485:11 prepared [3] - 445:5, 464:9, 464:25 preparing [3] - 475:21, 478:19, 478:20 prescription [1] - 448:5 presence [6] - 490:22, 527:2, 528:23, 542:4, 554:7, 668:14 present [13] - 439:5, 452:13, 474:12, 476:1, 478:17, 481:5, 484:20, 532:25, 637:9, 645:18, 651:24, 657:2 presentation [3] - 438:14, 460:1, 584:25 presentations [1] - 463:17 presented [2] - 438:25, 660:5 presenting [1] - 437:18 presently [1] - 447:9 president [1] - 441:4 pressure [1] - 521:24 pretty [4] - 448:7, 457:1, 466:8, 495:10 Prevention [1] - 661:21 previous [5] - 497:1, 576:4, 617:8, 648:12, 668:23 primary [4] - 445:4, 455:2, 501:8, 629:18 printouts [1] - 505:13 private [1] - 493:18 probability [1] - 574:22 problem [2] - 476:3, 641:13 problems [3] - 448:22, 546:16, 553:13 Procedure [1] - 485:5 procedure [7] - 475:21, 484:12, 485:1, 608:22, 634:24, 635:5, 635:15 procedures [4] - 506:12, 609:8, 635:1, 661:15</p>	<p>proceed [2] - 440:6, 562:25 Proceedings [1] - 670:4 Process [1] - 652:19 process [14] - 452:6, 452:10, 455:15, 456:19, 470:21, 473:15, 481:23, 493:6, 497:3, 520:17, 565:24, 614:25, 637:22, 663:9 processes [1] - 521:24 produce [5] - 484:2, 615:12, 615:13, 615:22, 642:12 produceable [1] - 616:4 produced [10] - 473:15, 473:20, 479:25, 599:15, 604:2, 611:19, 615:7, 625:18, 628:23, 667:15 produces [4] - 454:10, 509:2, 509:19, 511:12 producing [1] - 616:3 product [25] - 457:21, 473:6, 473:18, 482:23, 491:23, 516:23, 521:22, 521:23, 547:6, 553:16, 555:4, 555:20, 560:3, 561:3, 561:12, 565:9, 565:17, 565:20, 566:13, 566:22, 587:4, 651:10, 654:24, 656:10 production [1] - 537:18 Products [1] - 436:10 PRODUCTS [1] - 435:4 products [29] - 447:17, 458:16, 459:5, 472:18, 473:8, 473:24, 474:4, 479:18, 514:24, 516:15, 521:2, 521:7, 522:16, 533:7, 536:14, 537:20, 537:22, 538:12, 538:16, 542:4, 556:7, 556:16, 559:16, 560:21, 562:21, 571:6, 585:20, 640:14, 654:22 professionals [4] - 446:14, 448:23, 449:9, 462:18 professor [1] - 476:17 profiles [3] - 503:14, 503:19 Program [2] - 455:4, 603:9</p>	<p>program [1] - 448:17 programs [1] - 443:15 project [1] - 553:9 projects [1] - 449:3 promulgated [1] - 493:17 properly [4] - 508:18, 661:7, 662:22, 667:10 PROSKAUER [1] - 435:21 Prospectus [1] - 476:10 Protection [5] - 448:19, 448:21, 454:18, 551:9, 582:17 protective [1] - 480:2 protocol [11] - 452:22, 508:12, 511:5, 512:8, 528:16, 546:11, 549:6, 549:8, 586:23, 592:3, 614:12 protocols [8] - 455:22, 489:21, 497:16, 498:13, 502:13, 518:25, 520:20, 542:13 protruding [1] - 596:7 provide [4] - 437:22, 448:20, 481:19, 534:10 provided [5] - 465:23, 473:2, 535:4, 541:16, 614:2 provides [1] - 589:19 proving [1] - 557:23 provision [1] - 484:9 Prudential [1] - 459:1 PSC [1] - 511:3 pseudo [3] - 511:13, 512:1, 512:4 public [4] - 450:1, 450:3, 457:24, 653:2 publication [6] - 466:4, 475:2, 476:8, 489:8, 490:12, 552:19 publications [1] - 475:3 publish [5] - 483:9, 492:22, 496:11, 643:5, 663:14 published [23] - 451:16, 454:13, 466:25, 474:23, 476:9, 478:23, 479:1, 487:25, 489:5, 489:12, 490:18, 491:18, 494:19, 495:20, 552:14, 633:13, 639:15, 642:16, 645:13,</p>
--	---	---	---

<p>647:1, 652:7, 654:20, 663:1 publishing [2] - 483:7, 492:17 pull [3] - 482:1, 482:11, 627:11 purchase [2] - 462:21, 463:3 purchased [4] - 463:5, 463:6, 550:2, 590:14 purported [1] - 593:2 purporting [2] - 581:20, 582:11 purpose [4] - 498:3, 636:15, 637:1, 643:3 purposefully [1] - 555:4 purposes [6] - 523:8, 556:19, 572:11, 573:9, 643:10, 653:3 PURSUANT [1] - 671:5 pursuant [1] - 474:22 put [35] - 442:21, 448:21, 450:1, 453:20, 455:19, 471:9, 475:18, 477:14, 477:16, 478:8, 478:18, 490:5, 500:16, 514:15, 518:17, 522:17, 523:13, 525:17, 526:21, 536:2, 555:19, 570:18, 579:20, 586:2, 601:8, 601:9, 608:7, 626:11, 628:23, 631:10, 655:17, 659:9, 660:4, 661:9 putting [4] - 438:6, 438:18, 442:4, 533:13</p>	<p>quantitative [1] - 506:1 quantity [2] - 516:19, 611:4 quarter [2] - 463:6, 539:15 QUESTION [11] - 546:1, 557:15, 557:19, 557:22, 567:13, 569:5, 578:22, 579:5, 588:20, 613:1, 613:5 questioning [3] - 632:14, 633:17, 667:18 questions [17] - 472:20, 552:6, 555:23, 569:24, 570:5, 577:20, 605:5, 622:4, 632:8, 632:24, 635:8, 645:12, 650:17, 654:17, 656:15, 658:1, 669:2 quick [1] - 582:9 quickly [6] - 463:10, 476:20, 515:24, 519:8, 523:19, 571:15 quite [5] - 445:9, 612:17, 614:9, 630:4, 657:21 quote [3] - 561:14, 649:13, 661:19</p>	<p>500:15, 505:1, 505:3, 506:19, 511:23, 518:11, 518:13, 532:9, 573:17, 574:19, 575:9, 576:3, 576:14, 577:18, 578:5, 579:1, 582:2, 582:4, 645:22, 648:1, 648:7, 648:10, 648:13, 648:15, 662:14, 662:16, 666:17 ratios [8] - 495:25, 496:3, 503:9, 506:22, 516:18, 533:2, 534:6, 577:2 raw [1] - 472:12 ray [10] - 443:23, 459:16, 488:20, 505:11, 505:16, 616:25, 634:25, 638:20, 653:1, 653:5 RE [1] - 435:4 reached [2] - 623:24, 628:12 read [15] - 443:7, 484:21, 545:20, 557:11, 567:4, 568:19, 569:1, 578:15, 578:19, 586:2, 588:15, 588:19, 589:21, 612:18, 634:12 reading [1] - 657:5 ready [4] - 437:7, 440:6, 540:23, 598:11 real [4] - 551:16, 582:9, 586:21, 628:18 really [13] - 455:17, 493:6, 497:4, 502:16, 521:24, 523:20, 551:14, 583:9, 593:5, 605:6, 618:12, 619:23, 642:20 realtime [1] - 621:12 reanalyzed [1] - 527:10 reason [6] - 498:24, 522:17, 564:1, 618:19, 623:10, 631:21 reasonable [2] - 480:9, 518:20 reasons [7] - 480:7, 494:7, 497:7, 621:2, 621:8, 623:17, 638:14 REATH [1] - 435:18 receive [2] - 448:4, 448:7 received [2] - 543:7, 650:3 recently [4] - 438:15, 553:19, 554:15, 619:18 receptionist [1] - 446:1</p>	<p>recertified [1] - 455:12 Recess [1] - 605:12 recess [2] - 485:19, 539:17 recipe [1] - 451:25 recognized [4] - 499:18, 546:11, 648:2, 663:24 recommend [4] - 537:12, 639:25, 641:21, 664:15 recommendations [1] - 665:3 recommended [4] - 609:17, 616:20, 641:17, 642:15 record [8] - 440:20, 505:11, 505:15, 510:24, 576:11, 599:23, 661:8, 661:9 recorded [1] - 610:14 recording [2] - 600:2, 604:3 Recross [1] - 670:6 red [3] - 482:10, 512:5, 604:22 REDIRECT [1] - 632:11 Redirect [1] - 670:6 redirect [3] - 659:14, 666:1, 666:2 reducing [1] - 664:9 refer [3] - 456:24, 518:15, 662:6 reference [10] - 439:20, 470:17, 471:12, 498:20, 498:21, 499:16, 504:16, 506:20, 646:4, 646:9 referenced [1] - 439:2 referencing [1] - 553:15 referred [4] - 462:7, 462:8, 554:1, 632:19 referring [5] - 552:25, 589:6, 603:10, 633:1 refers [1] - 589:22 reflect [1] - 662:19 reflects [1] - 661:15 refractive [3] - 487:4, 530:22, 533:19 regarding [10] - 437:9, 552:17, 566:12, 567:17, 570:5, 632:14, 634:2, 635:9, 650:24, 656:16 regardless [3] - 524:18, 662:3, 662:23 Region [3] - 661:9,</p>
<p>Q</p> <p>QAQC [2] - 456:22, 456:24 QC [2] - 501:11, 502:13 qualify [2] - 519:4, 649:17 quality [4] - 455:18, 457:6, 457:7, 650:8 Quality [2] - 456:25 quantification [4] - 505:21, 517:4, 520:12, 657:20 quantified [2] - 576:13, 657:10 quantify [6] - 485:13, 563:3, 609:2, 609:7, 609:23, 657:4</p>	<p>R</p> <p>R-93 [4] - 617:9, 617:10, 617:15, 617:22 railroad [1] - 473:11 raise [2] - 437:9, 437:25 raised [3] - 470:23, 471:7, 524:21 ran [2] - 540:19, 600:5 range [9] - 447:7, 447:8, 447:10, 449:4, 480:9, 532:2, 559:20, 640:21, 655:2 ranged [1] - 448:8 rarely [1] - 577:1 rate [4] - 525:2, 525:12, 635:19, 667:11 rates [1] - 650:9 ratio [50] - 468:17, 469:6, 469:9, 469:12, 469:16, 488:9, 493:11, 495:8, 495:17, 496:13, 496:20, 496:21, 496:25, 497:4, 497:12, 498:4, 498:8, 498:15, 498:17, 498:21, 499:25, 500:6, 500:13,</p>		

<p>661:11, 662:18 registering [1] - 456:22 Registry [1] - 661:22 regular [1] - 549:12 regularly [2] - 441:8, 467:1 regulate [1] - 563:15 regulated [24] - 500:3, 500:5, 512:9, 518:18, 524:11, 545:9, 547:25, 550:19, 559:8, 560:23, 568:18, 573:19, 575:13, 577:15, 578:7, 579:7, 580:7, 581:12, 582:17, 588:1, 588:13, 651:10, 651:13, 666:25 regulates [1] - 563:10 regulation [14] - 494:10, 497:3, 570:10, 570:16, 572:11, 572:21, 582:24, 583:4, 583:9, 583:11, 583:16, 584:1, 585:4, 585:6 regulations [5] - 455:8, 457:3, 495:15, 583:21, 663:22 regulatory [9] - 493:1, 547:1, 547:9, 548:22, 550:22, 551:18, 571:10, 653:3, 663:19 reject [1] - 578:12 rejected [1] - 497:7 relate [4] - 459:9, 464:2, 475:18, 565:3 related [4] - 447:2, 448:12, 537:25, 634:4 relates [13] - 438:12, 455:11, 466:14, 476:23, 538:16, 562:5, 564:3, 565:2, 590:22, 612:24, 621:15, 628:4, 629:9 relating [3] - 460:17, 552:14, 569:22 relatively [1] - 639:4 release [1] - 450:13 released [6] - 447:17, 447:21, 450:22, 460:25, 461:5, 656:23 relevance [2] - 439:4, 493:13 relevant [3] - 438:5, 454:24, 538:8 reliability [3] - 439:8,</p>	<p>539:3, 650:5 reliable [5] - 457:7, 481:4, 642:12, 650:13, 659:17 reliably [2] - 513:9, 531:19 reliance [6] - 439:2, 462:2, 470:16, 637:15, 659:3, 659:6 relied [4] - 470:21, 564:7, 656:18, 656:21 rely [24] - 466:25, 467:1, 496:16, 571:11, 572:21, 574:25, 576:19, 576:24, 580:19, 580:25, 581:6, 581:10, 582:24, 583:15, 584:24, 586:17, 586:22, 589:1, 589:10, 589:22, 595:11, 613:18, 650:1, 653:5 remained [1] - 622:8 remaining [1] - 521:12 remains [1] - 538:14 remediated [1] - 583:11 remediation [1] - 584:16 remember [18] - 442:20, 544:12, 552:3, 552:7, 553:2, 553:17, 556:12, 556:13, 558:12, 603:3, 608:8, 622:5, 630:3, 630:4, 654:4, 658:3, 660:25, 667:6 remove [7] - 450:17, 476:2, 479:4, 479:21, 480:15, 482:1, 482:13 removed [2] - 478:18, 480:20 removing [6] - 449:4, 459:21, 477:1, 477:8, 480:18, 633:12 reorient [1] - 607:4 repeat [1] - 651:25 repeatable [1] - 616:3 repeatedly [1] - 554:11 rephrase [5] - 472:2, 538:4, 551:2, 592:21, 618:13 replicate [3] - 614:6, 614:19, 636:22 report [80] - 439:2, 439:20, 449:25, 464:10, 470:16, 471:1, 471:2, 473:1, 476:21, 477:9,</p>	<p>486:10, 488:5, 488:17, 488:25, 514:18, 549:22, 550:1, 550:9, 550:11, 550:15, 560:19, 564:5, 564:10, 564:11, 573:7, 573:9, 573:15, 574:6, 590:6, 590:11, 590:13, 590:17, 591:21, 592:16, 592:20, 592:22, 593:3, 593:8, 593:9, 593:11, 593:16, 594:16, 594:22, 595:5, 597:23, 598:18, 598:20, 598:24, 599:7, 599:11, 601:10, 605:9, 606:13, 606:14, 607:22, 610:21, 611:3, 611:14, 613:22, 614:5, 615:17, 617:12, 618:19, 618:23, 618:25, 619:11, 622:2, 625:10, 625:14, 631:10, 631:13, 631:18, 644:8, 645:2, 650:11, 650:23, 657:8, 667:13 reported [2] - 476:25, 477:5 REPORTER [1] - 435:25 reporting [1] - 592:18 reports [5] - 538:23, 595:4, 597:18, 598:1, 625:19 represent [3] - 452:8, 465:1, 627:7 representative [3] - 454:9, 458:17, 534:10 represented [2] - 471:14, 473:7 reproduce [1] - 614:16 reproducibility [2] - 526:15, 613:18 request [1] - 637:25 require [5] - 494:6, 507:3, 513:17, 648:3, 652:14 required [12] - 504:4, 505:5, 506:3, 506:4, 506:6, 506:9, 507:19, 507:22, 507:23, 584:11, 648:6, 649:21 requirement [11] - 469:2, 495:17, 498:9, 499:22, 500:13, 503:13, 515:1, 604:24, 648:4, 648:5 requirements [4] -</p>	<p>500:14, 502:17, 523:2, 648:23 requires [4] - 512:13, 512:23, 603:13, 603:16 requiring [1] - 503:1 Research [2] - 466:9, 475:3 research [2] - 448:22, 654:7 researcher [1] - 476:18 resemble [1] - 574:13 residential [1] - 563:15 resistance [1] - 521:25 resolution [17] - 459:12, 469:22, 533:25, 534:12, 535:3, 620:16, 620:18, 621:5, 621:8, 621:11, 621:15, 624:1, 624:3, 629:17, 630:1, 630:8, 630:9 Resources [3] - 527:1, 528:12, 528:24 respect [1] - 632:19 response [3] - 506:2, 637:25, 656:15 Response [2] - 455:9, 583:5 responsive [2] - 656:2, 667:21 rest [1] - 609:6 restrictions [1] - 620:8 restrictive [3] - 498:18, 519:13, 519:19 result [5] - 451:23, 479:6, 493:21, 548:22, 626:18 results [24] - 451:21, 452:1, 475:15, 478:11, 506:1, 525:8, 529:12, 529:20, 529:22, 536:25, 538:9, 615:24, 616:3, 619:10, 621:9, 621:24, 622:5, 625:2, 629:13, 629:16, 636:21, 640:13, 641:18, 645:3 resumed [2] - 486:4, 606:4 resumes [1] - 540:6 retained [1] - 473:19 reverse [2] - 457:19, 525:14 Review [3] - 448:10, 449:9, 449:10 review [13] - 448:12,</p>
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<p>448:16, 502:13, 538:23, 552:19, 587:2, 611:5, 627:2, 639:15, 639:16, 650:16, 650:17, 663:9 reviewed [28] - 452:19, 463:14, 471:15, 474:23, 476:8, 476:21, 489:5, 489:13, 491:19, 492:18, 492:22, 496:11, 537:17, 538:15, 564:7, 564:9, 625:19, 625:24, 625:25, 626:23, 642:17, 647:1, 654:20, 656:19, 663:1, 663:14, 665:6, 668:11 reviewers [1] - 647:3 revise [1] - 637:22 Revision [1] - 652:18 revision [1] - 637:21 rewrite [1] - 452:15 Reynolds [4] - 480:6, 481:18, 482:7, 482:17 Reynolds' [1] - 481:1 RICE [1] - 435:13 rice [1] - 469:23 richerite [3] - 492:10, 581:3, 585:13 rid [1] - 583:17 Rigler [7] - 597:22, 597:25, 598:3, 598:11, 598:15, 598:18, 600:6 Rigler's [1] - 598:7 rise [7] - 437:4, 485:18, 486:1, 539:16, 540:3, 605:11, 606:1 RJ [4] - 454:5, 623:2, 650:19, 650:23 road [1] - 515:19 robin [1] - 630:21 robins [2] - 623:21, 631:1 rock [8] - 569:19, 574:9, 575:1, 577:5, 577:6, 577:9, 577:22, 577:24 Roggli [1] - 490:17 role [3] - 451:4, 451:5, 453:11 rooms [1] - 450:21 ROSE [1] - 435:21 rotate [1] - 509:8 round [3] - 623:20, 630:21, 631:1 routinely [2] - 501:7, 501:16</p>	<p>row [1] - 510:4 rows [2] - 464:1, 510:7 royal [1] - 471:22 RPMs [1] - 591:18 RPR [1] - 435:24 rubber [2] - 482:11, 482:15 rugs [1] - 447:21 rule [3] - 517:16, 573:10, 581:19 ruled [2] - 659:9, 667:16 rules [21] - 457:3, 487:14, 493:11, 495:10, 495:14, 532:1, 549:7, 551:12, 573:20, 573:23, 574:6, 575:2, 577:8, 578:11, 583:1, 583:15, 584:23, 586:3, 586:16, 586:22, 649:10 ruling [1] - 470:24 run [5] - 455:4, 456:11, 477:12, 542:12, 639:12 running [2] - 466:9, 618:10 RUSSONIELLO [1] - 435:24 Russoniello [2] - 671:10, 671:11 Rutgers [1] - 476:18</p>	<p>586:18, 586:24, 595:22, 599:1, 611:22, 613:12, 615:11, 615:14, 615:19, 620:9, 620:22, 620:23, 621:13, 624:18, 624:19, 625:9, 627:9, 627:11, 627:22, 628:2, 628:7, 628:9, 629:5, 664:16 sampled [1] - 449:23 samples [147] - 438:8, 443:8, 443:20, 444:20, 445:3, 445:5, 445:8, 445:9, 447:11, 448:25, 449:2, 455:7, 473:4, 473:7, 473:10, 473:12, 473:13, 473:14, 473:18, 486:14, 501:4, 501:15, 512:13, 512:22, 519:23, 527:4, 527:8, 528:14, 528:15, 528:20, 528:23, 529:2, 529:14, 529:18, 536:20, 537:2, 540:16, 540:19, 540:23, 541:21, 546:23, 549:2, 549:20, 550:2, 550:4, 550:13, 560:12, 561:7, 562:6, 562:8, 562:12, 562:17, 562:22, 563:4, 563:5, 565:2, 565:5, 575:20, 576:2, 578:23, 583:18, 585:23, 587:15, 587:25, 589:15, 590:6, 590:14, 590:22, 592:1, 592:10, 592:13, 595:20, 597:3, 602:1, 607:22, 610:3, 611:3, 614:11, 615:8, 616:7, 616:21, 616:24, 617:8, 617:11, 617:20, 618:6, 618:11, 618:16, 619:2, 619:25, 620:5, 620:11, 620:14, 621:4, 622:13, 622:24, 623:1, 623:11, 624:10, 625:5, 625:24, 625:25, 626:4, 626:23, 627:3, 627:13, 627:17, 627:21, 628:11, 628:15, 628:20, 628:25, 629:9, 630:21, 631:6, 633:23, 638:19, 639:11, 640:7, 641:7, 642:7, 642:21, 643:14, 643:16, 643:17, 643:19, 643:22, 643:23, 643:25, 644:13,</p>	<p>644:14, 644:15, 644:22, 644:25, 648:12, 650:20, 650:24, 655:2, 662:12, 662:13 sampling [2] - 453:9, 630:21 San [2] - 446:7, 458:25 sat [1] - 596:16 satisfied [7] - 488:19, 495:19, 518:23, 623:16, 625:1, 625:4, 648:18 satisfies [1] - 662:21 satisfy [2] - 499:10, 499:18 saved [1] - 550:5 saw [9] - 515:21, 535:13, 541:2, 557:8, 584:24, 604:4, 604:12, 604:16, 631:5 scale [1] - 516:1 scanning [5] - 443:22, 444:4, 444:16, 446:17, 459:13 scatter [1] - 510:6 scattering [1] - 518:5 scatters [1] - 510:8 Schedule [1] - 448:5 school [14] - 441:17, 443:15, 443:20, 458:22, 458:24, 458:25, 583:13, 583:23, 584:5, 584:17, 584:20, 585:8, 586:5, 586:13 schools [5] - 494:1, 583:11, 583:17, 584:6, 584:9 science [12] - 441:18, 441:20, 441:21, 443:21, 444:3, 444:9, 444:15, 446:5, 447:24, 501:20, 501:25, 542:15 Sciences [1] - 476:13 sciences [1] - 490:13 scientific [16] - 453:23, 462:23, 463:17, 463:23, 487:24, 496:7, 499:2, 518:20, 520:14, 520:16, 520:20, 552:19, 615:24, 659:20, 663:8 scientifically [1] - 659:17 scientist [6] - 438:6, 442:8, 442:12, 538:9, 646:20, 656:8</p>
		S	
		<p>S/Vincent [1] - 671:10 SAED [22] - 489:2, 489:20, 491:2, 502:19, 507:3, 507:8, 508:2, 508:17, 512:12, 513:17, 513:18, 513:24, 513:25, 514:16, 516:25, 517:8, 545:6, 646:8, 646:9, 648:5, 648:18, 648:23 safe [5] - 494:2, 583:13, 584:20, 663:25, 664:6 Safety [1] - 661:23 sake [1] - 534:4 SALES [1] - 435:5 sample [46] - 443:5, 443:6, 444:21, 473:11, 475:21, 485:12, 491:17, 499:7, 505:12, 514:21, 515:23, 516:8, 520:8, 525:1, 531:1, 534:21, 540:13, 541:10, 550:17, 551:14, 551:24, 581:23,</p>	

<p>scientists [7] - 442:18, 442:23, 446:23, 448:17, 452:13, 453:19, 505:8</p> <p>scope [1] - 666:2</p> <p>score [1] - 589:1</p> <p>Scotts [3] - 461:3, 461:13</p> <p>screen [8] - 516:4, 524:15, 535:25, 536:17, 547:23, 557:8, 586:3, 620:19</p> <p>seam [1] - 442:20</p> <p>seated [1] - 437:6</p> <p>second [6] - 442:22, 449:5, 529:10, 574:2, 584:16, 602:20</p> <p>seconds [1] - 459:7</p> <p>section [4] - 513:21, 523:19, 589:8, 664:18</p> <p>SECTION [1] - 671:5</p> <p>see [90] - 439:6, 455:22, 459:4, 469:20, 469:21, 469:24, 470:1, 470:6, 483:24, 486:9, 487:18, 487:19, 488:18, 489:17, 490:24, 492:4, 496:4, 497:13, 497:20, 498:6, 499:24, 500:17, 502:15, 502:18, 509:4, 510:11, 512:1, 512:15, 514:3, 514:10, 515:5, 516:1, 520:11, 524:15, 525:20, 527:2, 528:22, 531:1, 532:7, 532:12, 533:24, 534:1, 535:15, 536:14, 538:9, 559:22, 560:14, 570:10, 571:17, 579:15, 579:25, 580:3, 580:10, 588:7, 594:6, 596:5, 596:6, 596:10, 604:7, 604:11, 604:12, 604:15, 604:16, 608:16, 609:4, 609:9, 609:23, 618:25, 620:17, 622:18, 623:13, 626:4, 626:11, 627:12, 629:17, 630:5, 634:16, 635:2, 635:23, 639:5, 639:9, 642:6, 642:9, 642:24, 644:19, 653:16, 654:15, 659:1</p> <p>seeing [16] - 525:5, 531:15, 532:12, 539:5, 541:7, 579:24, 581:19,</p>	<p>599:12, 601:2, 601:5, 601:6, 601:16, 601:17, 610:11, 625:11, 650:10</p> <p>seem [1] - 546:9</p> <p>sees [3] - 578:2, 578:24, 579:21</p> <p>seldom [2] - 512:13, 512:23</p> <p>Seldom [1] - 512:22</p> <p>selected [6] - 444:2, 448:11, 449:10, 489:1, 511:25, 616:19</p> <p>Selikoff [2] - 490:5, 490:14</p> <p>SEM [2] - 592:9, 634:20</p> <p>semiconductor [4] - 446:5, 446:6, 446:7, 447:25</p> <p>semiquantitative [4] - 504:15, 504:20, 504:24</p> <p>send [7] - 452:14, 501:12, 616:7, 616:20, 622:13, 631:1, 644:24</p> <p>sending [2] - 456:22, 643:3</p> <p>sense [1] - 564:20</p> <p>sensitive [15] - 475:11, 475:15, 477:23, 481:4, 487:21, 529:9, 537:9, 537:16, 546:16, 554:2, 633:5, 633:7, 637:6, 642:12, 664:23</p> <p>sensitivities [1] - 477:9</p> <p>sensitivity [8] - 477:1, 477:6, 479:22, 487:13, 529:25, 635:23, 641:17, 653:21</p> <p>sent [30] - 463:8, 494:21, 553:6, 616:24, 617:8, 617:12, 617:20, 618:16, 619:3, 619:6, 619:25, 620:11, 622:24, 629:5, 630:20, 636:20, 636:25, 637:2, 637:3, 642:21, 643:14, 643:17, 643:19, 643:23, 643:25, 644:2, 644:13, 644:17, 644:21, 644:22</p> <p>sentence [5] - 608:14, 609:2, 609:5, 609:6, 609:22</p> <p>separate [2] - 528:24, 621:9</p>	<p>separated [1] - 481:24</p> <p>separation [58] - 439:10, 476:22, 476:25, 479:3, 479:17, 480:3, 480:12, 481:3, 482:6, 482:18, 483:7, 483:10, 484:15, 485:9, 486:9, 529:16, 537:4, 537:7, 537:9, 537:13, 545:8, 548:3, 548:18, 553:11, 590:24, 590:25, 592:5, 614:14, 632:21, 632:24, 633:2, 633:5, 633:8, 633:16, 633:22, 634:5, 634:8, 635:6, 635:11, 635:21, 635:22, 636:18, 639:11, 640:7, 640:15, 641:23, 642:10, 642:23, 642:25, 651:4, 651:18, 652:4, 653:7, 653:14, 653:20, 653:24, 664:22, 665:3</p> <p>Separation [1] - 476:6</p> <p>September [3] - 597:22, 598:20, 602:4</p> <p>series [10] - 472:8, 472:9, 478:3, 478:4, 478:6, 499:20, 512:10, 513:4</p> <p>serpentine [2] - 507:12, 661:25</p> <p>serve [3] - 448:11, 449:10, 454:6</p> <p>Services [15] - 441:4, 441:10, 445:17, 446:12, 447:6, 454:24, 457:12, 458:20, 462:12, 472:25, 473:4, 474:16, 474:18, 476:14, 503:17</p> <p>serving [1] - 454:1</p> <p>set [25] - 463:13, 464:10, 472:25, 485:4, 486:9, 486:11, 487:25, 494:25, 497:7, 514:18, 517:4, 517:22, 565:17, 566:4, 566:13, 567:15, 567:20, 644:21, 647:7, 659:23, 660:6, 660:14, 666:9</p> <p>setting [3] - 438:21, 506:21, 660:12</p> <p>settled [1] - 450:5</p> <p>setup [1] - 446:12</p> <p>seven [3] - 464:12, 530:10, 655:6</p>	<p>several [1] - 482:2</p> <p>SEYFARRTH [1] - 436:9</p> <p>shadow [1] - 553:16</p> <p>shape [2] - 468:7, 495:7</p> <p>SHARKO [1] - 435:18</p> <p>shatter [1] - 574:9</p> <p>SHAW [1] - 436:9</p> <p>sheet [8] - 505:13, 505:17, 511:1, 518:17, 531:1, 599:13, 599:19, 625:10</p> <p>sheets [12] - 500:18, 502:18, 531:11, 541:2, 541:12, 599:16, 599:18, 601:12, 602:5, 627:11, 630:16, 650:14</p> <p>shelf [1] - 600:9</p> <p>shepherd [1] - 453:15</p> <p>shocked [1] - 558:13</p> <p>shop [17] - 553:1, 559:12, 597:18, 611:19, 618:17, 619:20, 621:16, 621:20, 623:24, 623:25, 626:13, 629:10, 629:11, 630:18, 630:22, 630:23</p> <p>shop's [1] - 623:18</p> <p>short [4] - 439:18, 485:17, 486:17, 492:5</p> <p>show [17] - 457:9, 464:3, 465:15, 467:8, 502:15, 503:9, 505:5, 515:7, 515:16, 524:23, 526:23, 535:25, 570:19, 576:12, 613:14, 637:13, 656:25</p> <p>showed [6] - 477:7, 481:19, 482:5, 525:12, 570:1, 605:1</p> <p>Shower [6] - 473:5, 473:6, 528:13, 550:6</p> <p>showing [4] - 453:4, 453:5, 497:24, 502:9</p> <p>shown [12] - 475:3, 484:1, 488:17, 488:24, 503:10, 511:17, 531:10, 556:14, 556:21, 570:9, 649:8, 654:8</p> <p>shows [14] - 439:10, 465:16, 466:12, 467:11, 477:13, 480:2, 481:23, 482:10, 515:5, 526:18, 533:21, 535:10, 594:17, 594:18</p> <p>side [6] - 442:21, 454:18,</p>
--	--	---	--

<p>467:12, 488:13, 503:5, 510:4</p> <p>sides [14] - 469:4, 469:7, 473:21, 488:12, 497:19, 497:22, 498:16, 500:2, 527:20, 573:17, 574:20, 578:4, 579:1, 645:24</p> <p>signatures [2] - 452:4, 452:7</p> <p>significance [6] - 539:1, 561:19, 654:19, 655:13, 655:15, 655:18</p> <p>significant [14] - 450:18, 492:25, 560:23, 561:3, 561:15, 562:14, 562:15, 566:18, 567:2, 654:4, 656:17, 657:1, 657:8, 663:18</p> <p>significantly [1] - 587:7</p> <p>signs [1] - 531:5</p> <p>silica [1] - 506:19</p> <p>silicon [3] - 503:20, 505:2, 516:18</p> <p>similar [7] - 453:15, 491:11, 492:17, 511:10, 568:4, 597:7, 662:9</p> <p>simple [3] - 442:19, 501:4, 586:21</p> <p>simpler [1] - 586:1</p> <p>simulation [1] - 562:10</p> <p>Sinai [2] - 490:6, 490:15</p> <p>single [19] - 469:21, 520:3, 580:17, 587:21, 587:24, 588:8, 588:22, 589:25, 593:12, 593:20, 594:6, 594:11, 594:17, 594:23, 595:6, 595:10, 595:12, 629:17, 630:5</p> <p>sink [1] - 478:10</p> <p>sinking [1] - 481:20</p> <p>sit [4] - 613:3, 631:4, 632:2, 650:17</p> <p>sitdown [1] - 631:24</p> <p>site [2] - 563:14, 563:15</p> <p>sitting [4] - 595:20, 595:21, 596:10, 622:23</p> <p>situation [1] - 442:10</p> <p>situations [1] - 555:14</p> <p>six [10] - 452:16, 501:14, 547:23, 548:10, 572:12, 620:22, 624:18, 627:22, 627:24, 628:2</p> <p>six-month [1] - 501:14</p>	<p>size [4] - 487:19, 511:24, 609:14, 662:1</p> <p>sizes [2] - 497:12, 609:19</p> <p>SKADDEN [1] - 435:20</p> <p>skip [1] - 500:10</p> <p>SLATE [1] - 435:20</p> <p>slice [1] - 468:24</p> <p>slide [46] - 439:9, 448:9, 452:3, 453:8, 454:22, 464:3, 465:13, 465:15, 465:16, 467:8, 483:21, 484:2, 488:24, 490:24, 496:10, 497:1, 503:5, 509:22, 511:17, 512:6, 525:24, 527:6, 544:10, 548:25, 552:2, 553:1, 559:14, 560:6, 568:3, 568:5, 570:3, 570:9, 570:19, 572:10, 572:24, 576:16, 583:8, 589:8, 601:13, 608:7, 608:10, 608:14, 608:20, 626:8, 627:6, 661:19</p> <p>slides [5] - 438:2, 478:19, 536:24, 569:22, 570:1</p> <p>slight [2] - 550:18, 574:21</p> <p>Slim [2] - 454:8, 454:11</p> <p>slow [2] - 665:13, 665:15</p> <p>slowly [1] - 501:4</p> <p>small [7] - 444:15, 449:11, 469:19, 469:20, 469:22, 515:24, 516:10</p> <p>smaller [4] - 487:19, 510:13, 530:19, 626:9</p> <p>smell [1] - 447:19</p> <p>so-called [1] - 635:10</p> <p>Society [4] - 451:11, 451:13, 495:11, 661:24</p> <p>soda [1] - 442:20</p> <p>soil [1] - 654:9</p> <p>solid [4] - 472:8, 472:9, 499:20, 512:10</p> <p>solution [4] - 472:8, 472:9, 499:20, 512:10</p> <p>solve [1] - 448:22</p> <p>someone [10] - 454:8, 501:4, 558:19, 567:14, 584:3, 586:11, 612:1, 614:6, 614:19, 616:20</p> <p>sometime [1] - 466:10</p> <p>sometimes [2] - 498:1,</p>	<p>574:11</p> <p>Sorise [1] - 567:8</p> <p>sorry [4] - 550:23, 627:25, 636:20, 665:23</p> <p>sort [5] - 459:6, 463:22, 501:25, 502:16, 585:10</p> <p>sounds [1] - 597:5</p> <p>source [2] - 473:25, 537:22</p> <p>sources [1] - 538:11</p> <p>South [2] - 464:14, 565:13</p> <p>southwest [1] - 535:11</p> <p>space [2] - 445:25, 446:13</p> <p>spacing [2] - 507:24, 513:19</p> <p>speaking [1] - 576:15</p> <p>speaks [1] - 608:10</p> <p>special [1] - 629:23</p> <p>specialist [1] - 447:3</p> <p>specialty [1] - 521:23</p> <p>specific [10] - 465:18, 468:9, 486:22, 551:16, 563:21, 614:17, 632:13, 633:20, 652:6, 652:9</p> <p>specifically [15] - 457:13, 466:24, 468:13, 476:23, 479:12, 483:17, 483:19, 512:18, 556:22, 572:17, 609:16, 618:1, 618:2, 621:17, 635:4</p> <p>specifications [3] - 442:15, 658:7, 658:10</p> <p>specifics [1] - 485:7</p> <p>specified [5] - 483:17, 506:9, 506:13, 520:5, 609:8</p> <p>specifies [2] - 439:16, 484:25</p> <p>specify [1] - 519:10</p> <p>specimen [1] - 509:7</p> <p>specimens [1] - 634:23</p> <p>spectra [9] - 503:7, 503:8, 504:14, 504:16, 504:21, 504:22, 505:10, 516:20, 646:4</p> <p>spectras [1] - 504:18</p> <p>spectrum [8] - 503:6, 503:7, 503:9, 503:14, 504:4, 505:11, 505:16, 517:3</p> <p>speculating [2] - 481:13,</p>	<p>659:7</p> <p>spend [7] - 455:21, 620:4, 620:9, 624:12, 624:21, 628:6, 628:15</p> <p>spending [4] - 624:9, 624:10, 627:24, 628:2</p> <p>spends [1] - 624:17</p> <p>spent [14] - 460:2, 542:3, 542:8, 550:7, 620:22, 624:25, 627:20, 627:22, 628:3, 628:25, 629:4, 630:17, 630:18, 650:18</p> <p>spheres [1] - 442:4</p> <p>spiked [5] - 600:10, 600:13, 611:25, 615:14, 625:5</p> <p>spiking [1] - 611:22</p> <p>spin [4] - 477:16, 481:23, 592:10, 592:13</p> <p>splits [1] - 614:10</p> <p>spoken [1] - 624:23</p> <p>spots [4] - 509:2, 509:20, 510:12, 510:14</p> <p>spun [1] - 591:16</p> <p>square [2] - 446:16, 515:22</p> <p>squared [1] - 530:15</p> <p>squarely [1] - 471:4</p> <p>staff [1] - 446:21</p> <p>stage [1] - 621:14</p> <p>staining [2] - 533:18, 621:14</p> <p>stand [5] - 442:16, 451:10, 455:25, 465:7, 613:3</p> <p>standard [69] - 452:7, 452:9, 452:12, 453:5, 453:16, 453:25, 458:12, 458:13, 483:16, 487:5, 495:11, 497:15, 498:12, 504:23, 508:25, 509:14, 512:17, 517:16, 519:5, 519:14, 519:19, 520:3, 520:15, 520:16, 524:8, 530:12, 531:2, 531:10, 533:6, 535:8, 545:5, 545:7, 545:17, 549:9, 550:19, 568:17, 573:8, 573:19, 574:24, 576:23, 578:11, 581:6, 586:20, 586:24, 589:5, 594:6, 603:10, 603:13, 606:19, 609:1, 611:11, 611:16,</p>
---	--	---	---

<p>612:2, 613:17, 614:1, 615:9, 646:2, 646:4, 646:16, 652:5, 659:21, 659:23, 660:13, 660:14, 662:14, 667:1, 667:4 Standard [4] - 439:16, 455:5, 456:9, 495:12 standardize [1] - 450:24 standardized [2] - 449:19, 451:23 standardizing [1] - 451:21 Standards [1] - 483:8 standards [26] - 451:16, 451:17, 452:20, 503:15, 503:25, 504:7, 505:4, 506:24, 508:9, 534:22, 576:18, 611:6, 611:22, 612:6, 612:15, 613:9, 613:13, 613:23, 615:1, 615:4, 615:6, 615:9, 615:19, 622:17, 646:9, 660:6 standpoint [1] - 450:4 stands [3] - 455:3, 583:5, 638:17 starch [1] - 458:4 start [7] - 443:4, 457:13, 501:3, 540:13, 568:7, 577:9, 640:3 started [14] - 444:13, 444:14, 444:18, 445:3, 445:17, 445:24, 445:25, 451:8, 455:15, 455:16, 554:12, 554:17, 598:16, 644:18 starting [3] - 441:12, 474:11, 603:5 starts [1] - 626:8 state [23] - 440:19, 457:11, 458:19, 458:21, 458:23, 458:24, 460:14, 462:1, 462:21, 463:2, 464:19, 465:4, 496:19, 520:6, 530:13, 531:18, 532:24, 552:7, 560:19, 573:14, 589:5, 598:10 STATE [1] - 435:7 statement [7] - 481:1, 481:6, 481:10, 506:8, 546:2, 586:10, 662:17 States [3] - 521:6, 521:10, 651:11</p>	<p>STATES [2] - 435:1, 435:7 states [22] - 457:10, 458:18, 460:14, 464:13, 465:1, 480:6, 496:18, 497:6, 557:10, 558:1, 571:4, 577:3, 580:11, 581:7, 581:9, 581:11, 589:2, 589:11, 635:16, 662:5, 664:14, 664:19 statistics [1] - 603:22 stay [1] - 595:23 steel [1] - 442:20 Steering [2] - 435:16, 437:17 STENOGRAPHIC [1] - 671:7 step [29] - 488:6, 489:6, 489:20, 490:20, 491:8, 493:6, 497:19, 497:22, 497:23, 497:25, 498:1, 507:23, 508:22, 508:23, 512:7, 515:6, 520:2, 527:22, 528:7, 646:7, 646:16, 647:4, 647:6, 647:16, 663:11, 665:21, 666:9, 669:5 Step [21] - 488:8, 488:15, 488:17, 488:18, 488:19, 488:23, 488:24, 489:1, 495:6, 499:8, 499:10, 499:18, 502:18, 502:23, 502:24, 504:18, 506:25, 507:3, 507:7, 508:2, 509:22 steps [26] - 458:9, 488:1, 490:25, 493:5, 495:18, 498:1, 500:4, 502:19, 502:21, 510:3, 513:6, 513:8, 514:15, 516:11, 516:12, 517:9, 517:21, 517:24, 518:24, 519:10, 524:3, 545:9, 645:17, 645:20, 646:11, 648:17 stick [4] - 468:23, 498:12, 507:8, 657:23 sticking [1] - 534:2 sticks [1] - 480:17 still [11] - 447:11, 451:13, 492:25, 495:2, 501:10, 523:23, 542:17, 556:13, 561:15, 642:20, 663:17</p>	<p>stimuli [2] - 637:21, 639:16 Stimuli [1] - 652:18 stop [1] - 500:20 stopped [1] - 656:5 stopper [1] - 482:11 store [1] - 448:5 story [2] - 558:19, 644:10 straight [1] - 488:14 straightforward [1] - 513:5 strange [1] - 608:13 strategies [1] - 664:9 STREET [1] - 435:7 strength [12] - 442:13, 522:5, 522:10, 522:22, 523:1, 523:3, 523:11, 523:14, 647:9, 647:21, 647:23, 658:13 strengths [1] - 475:14 striations [1] - 534:1 strike [1] - 538:18 strong [1] - 442:14 structure [43] - 487:16, 488:10, 488:13, 488:22, 489:3, 489:4, 491:2, 495:7, 499:21, 499:22, 503:16, 510:1, 511:20, 512:9, 515:6, 515:14, 515:16, 515:23, 518:1, 518:10, 519:24, 522:24, 526:5, 526:11, 526:17, 528:3, 529:8, 529:11, 531:24, 533:20, 533:21, 534:25, 535:24, 578:7, 579:3, 579:6, 580:5, 646:8, 647:18, 661:4, 661:5, 662:24, 668:21 structures [34] - 442:16, 449:23, 495:24, 496:1, 500:11, 515:10, 524:17, 524:25, 525:5, 525:10, 526:24, 527:3, 527:10, 527:13, 527:15, 528:1, 530:3, 530:6, 530:11, 592:17, 599:3, 599:6, 599:9, 599:11, 599:23, 601:7, 602:18, 640:23, 641:3, 655:4, 655:14, 657:14, 661:25 student [1] - 443:24 studied [4] - 454:14, 501:1, 557:2, 656:22</p>	<p>studies [5] - 475:1, 493:3, 556:3, 556:6, 647:2 study [14] - 441:23, 476:22, 491:5, 491:7, 527:2, 561:13, 563:3, 564:16, 564:18, 603:23, 604:3, 642:17, 655:22, 656:21 studying [1] - 556:7 subcommittee [3] - 452:10, 453:9, 453:16 subD [1] - 483:24 subject [6] - 480:1, 590:17, 608:20, 667:8, 667:12, 668:9 subjected [2] - 663:9, 668:3 submit [2] - 438:3, 438:18 submitted [2] - 552:18, 650:11 subsequently [1] - 470:23 subset [1] - 644:2 substance [2] - 460:5, 491:12 Substances [1] - 661:22 substantial [1] - 462:17 substantially [11] - 469:4, 469:7, 488:12, 488:15, 497:12, 500:1, 573:16, 574:20, 578:4, 578:25, 645:23 suburb [1] - 440:25 sufficient [1] - 520:8 sufficiently [2] - 457:7, 527:19 suggest [1] - 659:23 suggested [4] - 497:4, 636:2, 659:16, 667:22 suggestions [1] - 449:3 suing [1] - 555:18 sum [2] - 476:20, 536:7 summarize [2] - 473:3, 640:19 summary [2] - 459:7, 527:7 supervise [3] - 502:2, 502:6, 612:10 supervision [1] - 650:6 supplement [1] - 644:5 supplemental [4] -</p>
--	---	--	--

<p>470:25, 564:7, 659:10, 667:13 supplied [1] - 516:25 supporting [1] - 614:5 suppose [1] - 526:10 supposed [4] - 484:8, 507:7, 508:7, 510:24 supposedly [2] - 447:21, 611:9 surface [3] - 450:5, 477:18, 530:15 survive [1] - 543:3 SUSAN [1] - 435:18 suspected [2] - 530:24, 630:22 sustained [2] - 651:15, 665:13 Suwanee [2] - 440:24, 446:15 swirl [1] - 480:17 switch [1] - 569:25 swore [2] - 556:2, 556:18 sworn [2] - 440:12, 541:16</p>	<p>478:23, 479:2, 479:12, 480:3, 481:5, 481:20, 481:24, 482:23, 483:10, 483:17, 483:19, 483:22, 484:6, 484:12, 484:19, 485:1, 485:9, 486:14, 487:11, 487:23, 490:22, 498:10, 500:12, 503:18, 504:22, 505:18, 506:13, 508:3, 508:15, 508:16, 508:19, 508:22, 508:23, 509:16, 509:24, 510:17, 510:20, 510:21, 511:8, 511:10, 511:12, 511:19, 511:20, 512:19, 513:10, 513:13, 513:16, 514:7, 514:17, 514:24, 515:3, 515:25, 516:14, 516:23, 517:11, 518:23, 519:4, 520:6, 520:22, 521:16, 525:1, 527:3, 528:13, 529:14, 530:3, 530:7, 531:8, 531:21, 533:7, 534:21, 536:14, 537:20, 537:22, 538:1, 538:11, 539:7, 540:13, 544:19, 545:3, 545:13, 545:17, 546:12, 547:21, 551:1, 551:6, 552:11, 552:15, 553:4, 553:7, 553:24, 554:6, 554:13, 554:18, 554:25, 555:20, 555:25, 556:4, 556:7, 556:9, 556:10, 556:19, 556:23, 557:2, 558:3, 559:5, 560:24, 564:15, 575:7, 578:23, 589:17, 589:20, 606:21, 607:10, 607:16, 609:15, 618:1, 618:3, 621:17, 633:6, 633:12, 635:18, 636:17, 637:7, 637:8, 637:22, 637:24, 638:1, 638:5, 638:9, 638:11, 638:21, 639:8, 639:20, 639:22, 640:6, 640:14, 641:19, 642:13, 646:2, 648:22, 649:13, 649:17, 651:8, 651:10, 651:14, 651:19, 652:6, 652:10, 653:6, 653:11, 653:22, 654:2, 654:3, 658:23, 660:24, 663:12, 664:4, 664:8, 664:10, 664:21, 664:23, 664:24,</p>	<p>665:7, 666:22, 668:14, 668:20 Talc [3] - 546:13, 546:23, 652:20 talcs [5] - 476:23, 479:17, 480:25, 490:2, 512:5 talcum [8] - 466:19, 552:23, 557:19, 557:24, 560:21, 574:5, 615:14, 656:23 talks [8] - 469:10, 483:19, 504:14, 504:15, 506:18, 511:9, 530:22, 618:1 tape [1] - 523:13 taught [1] - 442:9 technician [3] - 445:4, 445:10, 446:2 technicians [1] - 446:22 technique [9] - 480:8, 480:11, 480:13, 480:14, 480:16, 481:2, 487:16, 653:20 techniques [2] - 458:14, 554:3 Technology [1] - 455:6 telephone [2] - 623:5, 623:7 telescope [1] - 459:17 TEM [120] - 455:7, 458:12, 460:3, 463:2, 475:12, 475:16, 475:24, 489:6, 490:21, 490:25, 491:8, 492:15, 493:6, 494:6, 494:23, 495:11, 496:22, 498:13, 499:19, 500:21, 500:23, 501:12, 502:11, 506:3, 507:7, 508:2, 509:8, 513:13, 513:15, 513:22, 514:23, 515:17, 515:24, 515:25, 516:2, 516:3, 516:13, 517:9, 519:9, 519:10, 519:17, 520:2, 522:14, 523:15, 524:1, 524:3, 524:8, 524:24, 525:3, 526:11, 527:9, 527:23, 528:7, 529:12, 532:4, 549:2, 549:6, 549:15, 550:16, 551:11, 551:13, 573:20, 578:9, 579:16, 586:18, 586:25, 587:17,</p>	<p>587:19, 588:8, 589:1, 589:10, 589:11, 589:15, 589:23, 590:7, 590:10, 591:14, 591:22, 591:25, 592:9, 592:11, 596:23, 599:12, 600:3, 600:18, 602:1, 602:4, 607:9, 607:10, 607:23, 614:15, 617:8, 633:10, 634:20, 634:23, 639:11, 640:3, 640:7, 640:15, 642:8, 642:11, 644:16, 645:17, 646:17, 647:6, 647:10, 647:16, 647:19, 647:21, 648:17, 648:23, 649:6, 649:22, 653:8, 662:21, 663:11, 665:21, 666:9, 667:1 tend [1] - 507:21 tends [1] - 503:22 tens [1] - 655:3 tensile [11] - 522:5, 522:10, 522:22, 523:1, 523:3, 523:10, 523:14, 647:8, 647:21, 647:23, 658:13 term [4] - 535:13, 561:18, 561:20, 566:10 terms [52] - 446:12, 453:23, 458:8, 462:17, 465:4, 466:2, 467:6, 468:1, 469:9, 469:17, 473:23, 475:6, 475:17, 478:7, 478:14, 481:18, 482:17, 487:10, 493:5, 494:22, 496:16, 497:11, 498:20, 499:17, 504:20, 505:9, 506:8, 508:14, 509:23, 510:23, 515:15, 516:19, 517:2, 517:9, 519:16, 522:21, 528:9, 529:12, 531:14, 539:1, 616:2, 635:19, 640:5, 640:13, 641:2, 641:18, 644:12, 650:13, 652:25, 657:14, 666:15, 668:18 TERSIGNI [1] - 435:19 test [77] - 439:25, 440:2, 447:6, 448:7, 449:18, 452:21, 456:15, 469:18, 473:4, 474:18, 477:13, 477:20, 481:18, 481:22, 482:14, 483:9, 483:20,</p>
T			
<p>T.M [1] - 513:14 Tab [1] - 663:2 tab [20] - 463:20, 464:1, 465:9, 473:1, 491:6, 496:10, 497:9, 499:13, 500:9, 500:17, 504:13, 507:6, 508:6, 524:22, 536:21, 545:23, 578:18, 660:18, 660:19, 662:17 tabbed [1] - 463:11 table [2] - 571:7, 571:15 Table [1] - 465:13 tabs [1] - 475:4 talc [213] - 453:1, 453:6, 454:6, 454:10, 454:14, 458:8, 464:5, 466:14, 470:13, 471:13, 471:16, 471:17, 471:19, 471:25, 472:4, 472:7, 472:11, 473:6, 473:7, 473:8, 473:23, 473:25, 474:1, 474:3, 474:4, 474:8, 474:13, 474:17, 475:7, 475:18, 475:21, 476:2, 476:5, 477:2, 477:3, 477:8, 477:14, 477:15, 477:18, 478:2, 478:11,</p>			

491:12, 493:22, 493:25,
499:14, 500:16, 502:8,
505:14, 509:10, 514:10,
518:25, 522:2, 522:18,
522:21, 523:4, 523:10,
523:14, 524:17, 524:22,
525:2, 525:18, 528:22,
529:12, 533:20, 539:6,
545:2, 545:13, 549:6,
550:25, 552:22, 553:7,
578:24, 579:21, 584:8,
592:1, 603:21, 617:15,
617:16, 619:19, 619:21,
636:23, 638:5, 638:25,
639:1, 639:8, 646:17,
647:6, 647:9, 647:16,
648:2, 649:18, 649:22,
651:7, 651:19, 651:23,
652:3, 652:6, 656:25,
661:6, 662:20, 665:6
tested [24] - 443:5,
471:13, 471:25, 472:5,
472:15, 472:17, 472:19,
473:24, 473:25, 484:8,
515:25, 527:4, 540:12,
544:19, 550:1, 553:4,
616:8, 618:5, 618:7,
618:17, 638:22, 650:20,
668:13, 668:19
testified [25] - 438:15,
463:21, 464:4, 465:5,
542:19, 543:1, 543:18,
544:1, 554:16, 554:17,
555:2, 555:20, 555:22,
556:6, 565:8, 565:16,
566:12, 578:1, 606:24,
607:14, 607:18, 621:24,
622:19, 630:2, 630:10
testifies [1] - 440:12
testify [7] - 441:8, 464:7,
464:9, 542:11, 542:16,
543:12, 544:1
testifying [8] - 464:15,
543:15, 544:6, 544:15,
546:10, 555:18, 556:16,
559:4
testimony [38] - 437:9,
437:18, 439:1, 463:23,
465:7, 541:17, 543:23,
545:23, 554:23, 554:24,
555:10, 556:12, 556:13,
557:12, 557:25, 558:6,
566:3, 566:21, 567:7,

567:24, 568:22, 568:24,
578:18, 578:20, 579:13,
588:18, 588:25, 590:18,
591:8, 597:8, 603:4,
612:20, 614:2, 625:20,
636:4, 643:21, 657:11,
662:10
Testing [3] - 451:11,
451:13, 495:12
testing [107] - 438:7,
443:2, 443:4, 445:13,
447:12, 447:14, 448:13,
448:24, 449:2, 451:6,
451:15, 451:22, 452:22,
453:1, 453:6, 454:25,
455:2, 455:12, 458:7,
471:18, 471:20, 472:24,
473:21, 474:16, 475:6,
476:4, 476:23, 478:22,
480:24, 481:11, 482:20,
483:10, 483:17, 483:22,
484:4, 484:12, 485:1,
485:9, 487:11, 490:21,
494:24, 498:9, 499:4,
502:9, 503:18, 506:13,
508:3, 512:19, 513:13,
513:16, 514:18, 515:16,
516:21, 520:6, 522:23,
528:12, 537:1, 537:21,
538:9, 538:10, 538:14,
539:3, 539:10, 542:4,
549:1, 549:12, 549:15,
550:8, 551:6, 551:10,
553:10, 553:14, 553:16,
553:19, 553:23, 554:1,
554:6, 554:12, 554:17,
576:9, 584:10, 584:11,
584:19, 607:16, 616:24,
617:13, 621:25, 632:20,
636:2, 638:16, 641:23,
641:24, 643:1, 651:8,
651:19, 661:15, 664:20,
665:7, 667:9, 667:20,
668:4, 668:9, 668:17
tests [4] - 491:11,
541:17, 632:16, 652:14
Texas [1] - 458:24
THE [126] - 435:1, 435:8,
437:4, 437:5, 437:13,
439:18, 440:7, 441:5,
444:22, 451:7, 451:8,
459:25, 460:10, 461:7,
461:10, 461:12, 464:19,

464:21, 464:25, 471:10,
471:20, 471:22, 471:23,
472:21, 481:16, 483:3,
484:21, 485:17, 485:18,
486:1, 486:2, 499:11,
501:17, 501:19, 502:4,
523:21, 536:7, 536:10,
538:2, 538:6, 538:18,
539:13, 539:16, 540:3,
540:4, 545:21, 546:20,
551:3, 561:18, 561:20,
562:2, 562:13, 562:15,
562:22, 562:24, 562:25,
568:20, 569:1, 573:1,
578:16, 579:20, 579:25,
582:18, 582:21, 582:22,
588:16, 591:5, 591:6,
595:23, 596:22, 596:23,
597:11, 597:13, 598:12,
605:4, 605:10, 605:11,
606:1, 606:2, 610:4,
610:6, 612:19, 614:17,
631:7, 631:10, 631:12,
631:13, 631:14, 631:15,
631:21, 631:25, 632:4,
632:6, 632:7, 635:25,
636:6, 636:7, 636:8,
636:19, 637:2, 642:19,
643:5, 643:8, 643:14,
643:16, 643:21, 643:24,
644:3, 644:7, 645:5,
645:10, 651:1, 651:15,
656:4, 657:11, 657:23,
659:19, 660:3, 665:12,
666:3, 666:5, 667:24,
668:5, 669:4, 671:5,
671:7
themselves [2] - 537:22,
615:8
thereabouts [1] - 655:8
therefore [2] - 522:12,
522:19
thick [1] - 518:1
thin [8] - 532:21, 565:17,
566:4, 566:13, 567:15,
567:20, 574:10, 574:12
thinks [1] - 615:20
thinner [1] - 470:10
Third [1] - 490:6
third [11] - 442:22,
475:8, 489:20, 490:18,
508:22, 508:23, 512:7,
602:23, 622:14, 622:17,

646:7
third-party [2] - 622:14,
622:17
Thomas [1] - 445:24
THOMAS [1] - 436:9
Thompson [2] - 454:8,
454:11
Thoracic [1] - 661:24
thousand [2] - 470:10,
655:7
thousands [10] - 445:7,
445:8, 459:3, 470:6,
470:7, 555:9, 587:13,
655:3, 655:5, 657:1
thousandth [1] - 587:12
thousandths [1] - 559:25
three [52] - 445:9, 446:1,
454:21, 466:11, 466:13,
466:15, 466:20, 488:1,
489:6, 490:20, 490:25,
491:8, 493:5, 493:6,
513:6, 513:8, 515:9,
515:10, 516:12, 517:9,
517:21, 517:23, 518:23,
519:10, 520:2, 524:3,
526:7, 527:22, 528:7,
545:9, 548:25, 554:18,
564:14, 587:9, 587:13,
602:10, 602:23, 604:11,
604:15, 606:25, 642:3,
645:16, 645:20, 646:10,
646:16, 647:6, 647:16,
648:17, 663:11, 665:21,
666:9, 668:23
three-step [11] - 489:6,
490:20, 491:8, 493:6,
520:2, 528:7, 646:16,
647:6, 663:11, 665:21,
666:9
throughout [1] - 516:9
tiles [3] - 450:15, 450:17,
457:18
tilt [4] - 509:7, 510:11,
512:2, 513:2
tilted [4] - 509:4, 509:21,
510:11, 511:14
time-weighted [1] -
563:23
tip [4] - 478:15, 482:13,
482:14
tissue [1] - 491:16
title [3] - 441:1, 484:19,
618:23

<p>TITLE [1] - 671:5 TM [1] - 649:6 TO [2] - 671:5, 671:6 today [18] - 439:1, 453:3, 460:2, 460:5, 460:15, 495:3, 498:22, 500:14, 528:17, 552:3, 557:8, 605:5, 608:7, 622:23, 625:19, 644:8, 644:9, 660:13 together [13] - 442:4, 442:21, 453:20, 455:19, 514:15, 622:17, 628:23, 630:25, 631:4, 631:5, 631:11, 631:22, 656:9 took [5] - 461:18, 523:22, 527:9, 627:2, 628:9 tools [2] - 475:12, 523:18 top [8] - 442:22, 450:15, 478:12, 481:21, 481:25, 482:2, 499:24, 515:11 topic [1] - 569:22 topics [1] - 463:15 total [3] - 473:13, 524:25, 525:9 totality [1] - 575:5 Toxic [1] - 661:21 trace [14] - 560:10, 561:10, 561:14, 565:9, 566:6, 566:7, 566:9, 566:10, 566:11, 566:24, 567:21, 607:19, 643:2, 646:24 track [1] - 628:14 trade [1] - 465:17 Trade [1] - 457:25 trained [2] - 600:23, 650:15 training [6] - 443:14, 444:1, 500:22, 501:3, 501:18, 650:2 TRANSCRIPT [1] - 671:6 TRANSCRIPTION [1] - 671:7 transformation [1] - 577:12 translate [1] - 654:3 transmission [19] - 443:10, 443:17, 443:22, 444:1, 444:17, 446:17, 452:23, 462:22, 474:21, 478:21, 487:8, 488:2, 489:18, 491:20, 496:23,</p>	<p>497:16, 529:15, 588:21, 592:7 tray [1] - 482:12 tremolite [65] - 466:21, 467:13, 467:17, 467:22, 468:2, 472:8, 478:1, 478:4, 478:6, 484:7, 491:7, 492:6, 513:3, 514:12, 514:21, 514:23, 515:2, 515:14, 516:14, 516:17, 516:22, 517:3, 517:5, 517:10, 518:7, 518:8, 518:9, 518:15, 519:3, 521:17, 521:20, 522:8, 523:6, 525:22, 526:17, 530:24, 533:17, 557:7, 557:24, 561:23, 568:14, 569:6, 569:12, 570:23, 572:6, 575:7, 575:11, 576:5, 581:3, 585:13, 585:18, 585:22, 597:1, 600:10, 600:20, 601:18, 601:19, 601:21, 601:23, 610:15, 637:10, 658:21, 663:3, 666:11, 666:20 TRENTON [1] - 435:7 trial [10] - 544:7, 555:9, 558:15, 568:21, 568:24, 569:4, 578:20, 579:14, 588:18, 588:19 trials [1] - 544:3 tried [3] - 629:22, 630:11, 656:4 trier [1] - 438:17 true [31] - 524:13, 540:25, 543:5, 543:14, 545:10, 549:10, 552:23, 552:24, 554:22, 554:23, 558:20, 569:16, 571:4, 579:3, 579:4, 582:12, 591:2, 594:10, 594:23, 594:24, 605:2, 607:20, 607:21, 609:25, 629:15, 630:19, 634:5, 634:6, 665:1, 665:4 True [3] - 584:5, 627:22, 630:18 truth [10] - 542:2, 542:19, 544:14, 544:24, 547:17, 552:10, 554:5, 558:2, 595:9, 629:2 try [6] - 475:25, 479:21,</p>	<p>532:5, 544:3, 630:16, 632:13 trying [7] - 444:19, 523:20, 546:15, 558:19, 580:14, 615:13, 657:20 tube [8] - 477:13, 477:20, 478:8, 481:22, 481:23, 482:5, 482:9, 482:14 turn [2] - 451:1, 598:11 turning [1] - 505:15 turns [1] - 577:12 twice [3] - 542:17, 542:18, 601:20 two [57] - 438:15, 442:3, 443:1, 443:12, 443:21, 454:21, 455:19, 469:23, 473:12, 475:7, 498:1, 500:10, 501:8, 505:2, 509:25, 510:18, 513:3, 521:9, 523:18, 527:18, 527:19, 529:6, 533:13, 533:20, 536:9, 536:10, 536:24, 538:15, 548:10, 550:7, 554:18, 555:21, 557:7, 560:6, 568:13, 569:6, 587:9, 590:18, 593:6, 595:3, 596:4, 596:9, 606:25, 607:11, 607:25, 609:14, 609:18, 609:19, 619:24, 620:22, 620:24, 624:18, 628:6, 628:9, 631:3, 638:14, 644:21 two-dimensional [1] - 596:9 two-minute [1] - 536:9 type [26] - 442:15, 446:14, 458:8, 463:3, 466:18, 471:16, 479:20, 480:15, 482:15, 484:3, 484:20, 505:12, 514:2, 514:12, 514:13, 514:22, 515:2, 522:13, 530:17, 539:4, 543:20, 548:2, 586:24, 596:1, 634:7 types [35] - 442:4, 442:9, 446:19, 455:17, 455:18, 456:13, 458:6, 459:23, 466:20, 467:2, 467:3, 476:24, 478:1, 478:2, 478:10, 491:14, 513:1, 520:17, 520:24, 522:9, 523:5, 536:20, 537:19,</p>	<p>542:16, 548:10, 557:7, 581:7, 600:1, 609:18, 610:3, 652:14, 653:23, 658:22, 663:4 typical [3] - 484:20, 507:24, 510:24 typically [7] - 472:7, 484:6, 484:19, 501:12, 503:7, 503:20, 515:25</p>
U			
<p>U.S [6] - 435:25, 476:14, 638:1, 654:7, 654:12, 661:20 U.S.C [1] - 671:5 ultimately [3] - 451:1, 453:13, 618:5 ultra [6] - 560:10, 561:9, 561:10, 561:14, 566:9, 566:10 unanimously [1] - 525:19 unannounced [1] - 457:9 under [47] - 475:19, 475:22, 485:5, 486:14, 487:2, 508:9, 518:11, 519:5, 524:1, 524:8, 524:13, 528:7, 531:14, 532:25, 533:17, 534:22, 535:20, 536:19, 536:21, 536:23, 540:18, 540:23, 541:6, 541:11, 541:17, 541:22, 556:2, 556:18, 566:21, 599:12, 600:3, 614:8, 615:11, 625:9, 634:18, 638:11, 638:21, 639:18, 640:10, 648:19, 648:24, 649:1, 649:3, 649:5, 655:18, 658:19, 661:6 undergo [1] - 500:22 undergrad [1] - 441:12 underscores [2] - 638:13, 664:7 understood [1] - 485:16 undertaken [1] - 488:1 undisclosed [1] - 655:24 unique [1] - 504:17 uniqueness [1] - 507:15 United [3] - 521:5, 521:10, 651:11 UNITED [2] - 435:1, 435:7</p>			

<p>University [3] - 441:14, 441:17, 443:15 unknown [1] - 526:5 unknowns [1] - 513:5 unless [4] - 538:3, 546:6, 642:23, 659:23 unlike [1] - 591:20 unobtainable [1] - 649:14 unsure [1] - 622:8 untreated [1] - 634:24 up [68] - 438:18, 441:5, 442:16, 442:23, 446:21, 450:11, 457:9, 460:8, 462:25, 463:1, 471:13, 471:24, 476:21, 477:15, 482:1, 490:9, 501:6, 510:13, 516:1, 521:12, 533:13, 534:14, 536:7, 536:17, 541:2, 544:10, 547:23, 548:1, 548:6, 552:2, 553:15, 557:8, 561:16, 561:25, 565:22, 566:17, 569:2, 569:18, 574:8, 574:17, 574:25, 577:4, 577:10, 577:11, 577:22, 581:19, 585:15, 587:12, 591:5, 597:14, 597:16, 607:19, 608:7, 609:5, 610:10, 614:7, 614:24, 620:17, 626:12, 636:12, 638:25, 639:18, 655:4, 655:8, 656:13, 665:12, 666:7 updated [1] - 592:22 updates [1] - 501:10 upgrade [1] - 546:15 urban [6] - 558:4, 558:7, 558:11, 558:14, 558:21 USCDJ [1] - 435:8 uses [5] - 486:21, 487:17, 591:2, 658:10 USP [23] - 546:12, 546:22, 637:22, 638:1, 638:5, 638:9, 638:11, 638:16, 638:21, 639:18, 639:19, 652:8, 652:12, 652:13, 652:15, 652:20, 652:25, 653:10, 664:3, 664:12, 664:15, 665:4 Utah [1] - 458:23 utility [1] - 642:9</p>	<p>v</p> <p>vacuum [2] - 587:24, 588:12 vaginal [1] - 655:17 validation [3] - 615:25, 616:2, 668:19 values [2] - 504:3, 506:21 Van [2] - 454:3, 454:5 variation [8] - 524:22, 525:11, 597:23, 598:20, 598:24, 599:5, 600:5, 650:9 varieties [1] - 570:22 various [2] - 457:23, 613:15 verification [6] - 596:19, 597:9, 617:7, 617:10, 618:20, 641:3 Verification [1] - 618:24 verified [9] - 527:11, 527:14, 529:1, 614:15, 640:23, 640:24, 640:25, 641:6 verify [6] - 458:12, 508:7, 527:2, 528:22, 596:20, 596:22 vermiculite [8] - 458:4, 492:3, 492:9, 492:11, 585:16, 654:9, 663:3, 663:16 Vermont [8] - 454:21, 474:1, 474:3, 480:3, 482:23, 539:5, 560:15, 639:12 version [2] - 574:16, 626:9 versus [16] - 465:4, 469:11, 482:6, 496:21, 504:22, 524:7, 526:17, 526:22, 546:14, 587:24, 591:4, 593:3, 611:9, 619:23, 624:10, 633:25 vibration [1] - 450:14 vibrational [1] - 486:22 Victor [1] - 490:17 Victoria [1] - 612:13 video [1] - 621:12 view [3] - 590:2, 593:22, 607:19 viewed [1] - 635:14 VINCENT [1] - 435:24</p>	<p>Vincent [1] - 671:11 VIRGINIA [1] - 435:12 virus [2] - 459:14, 459:15 visual [11] - 504:6, 504:17, 505:5, 506:24, 507:9, 507:11, 587:16, 611:3, 613:10, 613:13, 613:19 visualization [1] - 534:12 visualize [3] - 470:2, 534:13, 536:18 visually [3] - 469:21, 505:1, 507:14 VOC [2] - 447:14, 456:13 voice [2] - 441:5, 591:5 volatile [5] - 447:14, 447:18, 447:20, 456:13, 456:15 VOLUME [1] - 435:5 Voluntary [2] - 455:4, 603:8 volunteered [1] - 453:15 vote [2] - 452:14, 453:20 voting [2] - 452:17, 453:25</p> <p>W</p> <p>W.R [1] - 585:14 wait [1] - 593:24 waiting [1] - 665:12 Walter [3] - 443:7, 465:25, 466:2 War [1] - 474:9 wash [1] - 482:14 washes [1] - 482:2 Washington [1] - 446:9 WASHINGTON [3] - 435:14, 435:20, 436:9 watch [1] - 613:4 water [3] - 480:16, 480:20, 565:21 Wave [1] - 490:6 wave [1] - 490:18 wavelengths [1] - 486:22 ways [1] - 650:1 weaknesses [1] - 475:14 weave [1] - 522:13 week [5] - 455:21, 542:17, 542:18, 542:20 weight [16] - 610:10, 611:6, 611:10, 611:15, 611:21, 612:2, 612:14,</p>	<p>613:22, 614:7, 614:18, 615:1, 615:3, 615:6, 615:18, 654:11, 654:18 weighted [1] - 563:23 Weil [1] - 437:21 WEIL [1] - 436:6 welcome [1] - 606:8 whatsoever [1] - 547:7 whereas [3] - 496:1, 519:16, 633:20 wherein [1] - 597:3 white [1] - 470:4 whole [3] - 564:10, 599:15, 661:16 wide [1] - 534:3 width [6] - 469:11, 469:14, 469:15, 470:8, 499:25, 532:9 WILLIAM [4] - 440:11, 486:4, 540:6, 606:4 William [2] - 440:21, 670:7 WILLIAMS [1] - 435:22 winchite [2] - 492:10, 581:3 wise [1] - 641:1 wishes [2] - 463:12, 492:4 withdraw [4] - 472:1, 507:2, 528:5, 652:1 withdrawn [1] - 484:24 Witness [1] - 669:7 WITNESS [24] - 451:8, 461:10, 471:22, 501:19, 561:20, 562:15, 562:24, 579:25, 582:21, 591:6, 596:23, 610:6, 631:10, 631:13, 631:15, 631:25, 632:6, 636:6, 636:8, 637:2, 643:5, 643:14, 643:24, 644:3 witness [10] - 438:7, 440:7, 440:11, 543:2, 544:2, 545:1, 547:4, 551:22, 554:9, 555:8 WITNESSES [1] - 670:6 WOLFSON [1] - 435:8 Wolfson [1] - 446:11 word [3] - 504:20, 569:12, 658:17 words [3] - 482:25, 509:18, 535:8 workers [2] - 450:17,</p>
--	---	---	--

563:11 works [2] - 486:20, 616:10 world [3] - 466:1, 546:3, 546:5 World [2] - 457:25, 474:9 written [4] - 463:14, 579:15, 652:19, 652:20 wrote [1] - 481:9	474:23, 545:12, 560:9, 598:19, 623:16
X	Z
X-ray [10] - 443:23, 459:16, 488:20, 505:11, 505:16, 616:25, 634:25, 638:20, 653:1, 653:5 XRD [22] - 617:9, 637:3, 637:6, 638:15, 638:22, 639:3, 639:9, 639:12, 639:17, 639:19, 639:22, 639:24, 642:9, 643:15, 643:23, 644:1, 644:18, 644:21, 644:22, 644:23, 645:3, 652:8	zero [2] - 509:8, 510:10 zeros [1] - 566:10 zone [12] - 507:17, 507:18, 507:21, 509:10, 509:12, 512:11, 512:13, 512:18, 512:19, 512:23, 513:17, 561:17 zonolite [1] - 585:20
Y	
Yamate [4] - 494:12, 494:14, 494:16, 494:22 yard [1] - 468:22 year [10] - 444:18, 462:15, 463:7, 464:22, 465:2, 501:25, 543:17, 554:15, 631:22, 668:7 years [35] - 440:1, 445:9, 445:14, 453:17, 454:21, 455:19, 461:11, 462:11, 466:16, 471:18, 471:21, 474:9, 479:3, 501:9, 501:10, 502:11, 542:20, 543:16, 549:23, 550:7, 554:18, 554:24, 557:10, 566:18, 567:14, 567:16, 590:18, 598:14, 616:15, 667:20, 668:8, 668:10, 668:23 yellow [1] - 464:1 yesterday [2] - 464:15, 544:6 yields [1] - 576:25 York [5] - 457:14, 457:24, 458:21, 464:14 YORK [1] - 435:16 yourself [6] - 462:8,	

Exhibit 8

EXAMINING CARCINOGENS IN TALC AND THE BEST METHODS FOR ASBESTOS DETECTION

HEARING

BEFORE THE
SUBCOMMITTEE ON ECONOMIC AND CONSUMER
POLICY
OF THE

COMMITTEE ON OVERSIGHT
AND REFORM

HOUSE OF REPRESENTATIVES

ONE HUNDRED SIXTEENTH CONGRESS

FIRST SESSION

DECEMBER 10, 2019

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C O N T E N T S

Hearing held on December 10, 2019	Page 1
WITNESSES	
PANEL ONE	
Mr. Alex Gorsky, Chief Executive Officer, Johnson & Johnson	
PANEL TWO	
Dr. William Longo, Scientist, Materials Analytical Services, LLC	
Oral Statement	6
Dr. Jacqueline Moline, Physician, Feinstein Institutes for Medical Research at Northwell Health	
Oral Statement	8
Mr. David Etheridge, Patient	
Oral Statement	9
Dr. Professor Rod Metcalf, Geologist, University of Nevada-Las Vegas	
Oral Statement	11
* The prepared statements for the above witnesses are available at: https:// docs.house.gov .	

INDEX OF DOCUMENTS

The documents listed below are available at: [https:// docs.house.gov](https://docs.house.gov).

- * “Johnson & Johnson Was on Trial for the Opioid Crisis. 33 Lawmakers Took Its Money Anyway,” article, Mother Jones; submitted by Rep. Tlaib.
- * “Michigan AG Nessel Announces State’s \$3.2 Million Share of Multistate Settlement with Johnson & Johnson, Ethicon, Inc.,” press statement; submitted by Rep. Tlaib.

EXAMINING CARCINOGENS IN TALC AND THE BEST METHODS FOR ASBESTOS DETECTION

Tuesday, December 10, 2019

HOUSE OF REPRESENTATIVES,
COMMITTEE ON OVERSIGHT AND REFORM,
SUBCOMMITTEE ON ECONOMIC AND CONSUMER POLICY,
Washington, D.C.

The subcommittee met, pursuant to notice, at 1:13 p.m., in room 2154, Rayburn House Office Building, Hon. Raja Krishnamoorthi (chairman of the subcommittee) presiding.

Present: Representatives Krishnamoorthi, DeSaulnier, Pressley, Tlaib, Maloney (ex officio), Grothman, Comer, Miller, and Jordan (ex officio).

Mr. KRISHNAMOORTHI. The subcommittee will come to order.

Without objection, the chair is authorized to declare a recess of the committee at anytime. I now recognize myself for five minutes to give an opening statement.

On October 18, 2019, FDA announced that its independent lab, AMA Analytics, detected asbestos in Johnson & Johnson's talc-based baby powder. In response to FDA's announcement on October 18, J&J issued a limited recall of one lot of its talcum powder.

On November 15, 2019, I sent an invitation to Alex Gorsky, the CEO of Johnson & Johnson, requesting that he appear before our subcommittee to discuss the public health concerns regarding J&J's baby powder. I am disappointed that J&J has refused to comply with our request.

While Mr. Gorsky has not refrained from making multiple public statements on this topic, including authoring written statements and speaking with media outlets, he has now avoided voluntarily testifying under oath before Congress. In fact, the subcommittee's very first hearing earlier this year examined possible carcinogens in talc-based products. Johnson & Johnson objected to the hearing, complaining that it had not been invited to participate. In a media release subsequent to our hearing, Johnson & Johnson stated, and I quote, the subcommittee did not hear the preponderance of evidence that supports the safety of our product.

Before today's hearing, we gave Mr. Gorsky almost a full month's notice of the subcommittee's interest in his testimony. We wanted Mr. Gorsky to come forward with J&J's side of the story, but he declined. We can only speculate as to why I am currently speaking to an empty chair.

But here are the facts. There is evidence that, for decades, tests have repeatedly found that Johnson & Johnson's talc-based baby powder contained asbestos. More sensitive testing methods than those used by Johnson & Johnson have detected asbestos in talc. In fact, in an internal Johnson & Johnson memo from 1975, employees discussing—discuss suppressing the use of sensitive asbestos-detection methods stating, and I quote, we want to avoid promotion of this approach. But Mr. Gorsky is not here to speak to that.

There is evidence to suggest that when citizen petitions to the FDA in the late 1980's and early 1990's demanded that J&J label its powder with a cancer warning, the company pushed forward during that same time period with an aggressive marketing plan for communities of color as its sales to Caucasians declined. But Mr. Gorsky unfortunately is not here to speak to that either.

We also have evidence that in 2008, Johnson & Johnson commissioned Research International, a market survey consultant, to conduct a consumer survey to determine public perceptions of its powder's name. The company learned then that women preferred the cornstarch-based powder over the talc-based powder and that women had a particular aversion to the words "talc" and "talcum," with one respondent even stating, quote, I don't like what that word brings to mind. Yet as you can see behind me, the company made an intentional decision to prominently feature cornstarch on the front of its cornstarch-based bottle, while failing to do the same by labeling the word "talc" on the front of its talc-based baby powder. Unfortunately, Mr. Gorsky is not here to speak to that.

Yet Mr. Gorsky's company has chosen to speak out and push back against every instance over the last two months in which asbestos has been detected in samples of Johnson & Johnson's talc-based baby powder, including the FDA's own analysis.

At this very moment, I am sending a document request to Johnson & Johnson seeking answers. We are asking the company to explain its decisions to disregard consumer preferences for cornstarch over talc, why the company continues to keep its talc powder on the U.S. market when countries like Canada are issuing findings to its citizens against the use of talc, and why the company refuses to attach an adequate carcinogen warning to the label of its talc-based baby powder, even as generic alternatives do so.

This subcommittee will not rest until it has answers to these questions. It's what the American people and public health deserve.

I now recognize our colleague, Mr. Comer of Kentucky, for five minutes for his opening statement.

Mr. COMER. Well, thank you, Mr. Chairman. I want to thank all the witnesses that are here today to testify.

The issue we're discussing today is extremely important. Any possible risk from widely used consumer products should be a concern for everyone. I'm confident that everyone in this room used some type of consumer products this morning, the safety of which we all take for granted. So I believe it's important that the committee hear from experts about possible talc contamination, the state of scientific understanding about the issue, and whether there are regulatory changes that should be considered with regard to

the FDA and other agencies. However, there are several things regarding this hearing today that I'm uncomfortable with.

First, I'd like to address the witness listed by the majority for today's hearing—the witnesses. Committee Democrats announced that there will be a second panel today featuring Johnson & Johnson CEO Alex Gorsky. However, since the majority was well aware in advance of today's hearing that Johnson & Johnson did not believe the CEO was the appropriate witness for the subject matter specified by the majority and that, therefore, he would not be appearing today, today's proceedings, as they relate to his testimony, appears to be for the benefit of the media and the audience.

Upon receipt of the invitation to this hearing on November 18 for the explicit purpose of examining, and I quote, methods used to detect asbestos in talc, the company has operated in good faith to provide an appropriate witness for this hearing. Mr. Gorsky's background is not in asbestos-detection methods and he does not have firsthand knowledge of such methods.

Given the hearing topic identified by the committee majority, Johnson & Johnson offered a recognized expert on talc geology testing methods. When that witness was rejected, the company proposed that Kathleen Widmer, the chair of Johnson & Johnson's North American consumer division which oversees Johnson's baby powder, be allowed to appear. She's the highest-level executive who is directly knowledgeable about the supposed topic of today's hearing. Committee Democrats again rejected Johnson & Johnson's proposal.

Then in a supposed change of heart just a few days ago, the majority asked Ms. Widmer would—would be able to testify after all. Johnson & Johnson then refused to rearrange her schedule—or Johnson & Johnson then rushed to rearrange her schedule so that she could appear as they had originally proposed. However, later that same day, committee Democrats again changed course and said that she was not acceptable after all, and they insisted on Mr. Gorsky, who the company has repeatedly and convincingly stated is not an appropriate witness for the topic of the committee—of this committee Democrats' choosing today, as if Democrats needed more theater on the day they announced their partisan impeachment.

Mr. Chairman, Johnson & Johnson has, for the past years, shown a willingness to cooperate with the committee's investigation. It's provided briefings and it has produced documents requested by the majority. In fact, the company has produced nearly 10,000 pages of requested information and offered to provide an additional 300 pages. This offer of additional information was declined by the majority for unspecified reasons.

I worry, Mr. Chairman, that the activities related to witness invitations and document production leading up to today's hearing may result in the perception that the committee's investigation is not about learning new facts about the potential harm of consumer products, but rather is about trying to publicly shame or embarrass a company and seek out “gotcha” moments to aid in ongoing litigation, something this committee has been regularly doing over the past year.

I worry too that the committee's actions raise questions about whether it's using its investigative tools to interfere with or give

the appearance of interfering with ongoing litigation. More than 15,000 liability lawsuits have been filed against Johnson & Johnson over its talc-based products. This hearing is yet another example of the majority's actions, abiding by the trial bar, by holding hearings and requesting documents that are critical and otherwise difficult to obtain to plaintiffs' attorneys ability to litigate and file additional lawsuits. We've already seen evidence of this happening. One of the majority witnesses at its hearing on this topic earlier this year is now citing her testimony before Congress as part of her credentials during one of the ongoing lawsuits.

I hope the subcommittee will commit to doing its best to refrain from interfering or appearing to interfere with ongoing litigation as we move forward.

As I said at the beginning of my statement, the issue we are discussing here today is of the utmost importance. However, I hope we can approach the topic moving forward with a spirit of fairness and with an eye toward hearing from witnesses who can provide the best available science and not just those engaged in ongoing litigation.

With that said, I thank our witnesses for appearing before our subcommittee today.

Mr. Chairman, I yield back.

Mr. KRISHNAMOORTHY. Thank you very much, Mr. Comer.

Congressman—Congresswoman Maloney is with us, the new chairwoman of our committee, and I now recognize her to say a few words and give her opening statement as well.

Chairwoman MALONEY. Thank you. Thank you so much, Mr. Chairman, for holding today's critical hearing. And thank you for your subcommittee's dedication to protecting public health.

In October 2019, FDA announced that it detected asbestos in Johnson & Johnson's baby powder, leading the company to recall more than 30,000 bottles. Since then, Johnson & Johnson has publicly questioned the integrity of FDA's findings, casting doubt on the accuracy of the testing that was conducted.

The American people need to have faith that the products, that they are safe; and that is part of FDA's critical role. If Johnson & Johnson claims there is some problem with FDA's methods or procedures, they need to explain those allegations in detail and provide the basis for their allegations.

Unfortunately, as the chairman explained, the CEO of Johnson & Johnson, Alex Gorsky, has declined the subcommittee's invitation to testify here today. He has spoken to the press, issued public statements, and testified in litigation, but he apparently does not want to defend his company's actions here today. That is unfortunate and, frankly, unhelpful.

I hope and encourage the subcommittee to continue its important work on behalf of the American people, and I pledge my support as they do so. Thank you, again, Mr. Chairman, for this important hearing.

And I yield back.

Mr. KRISHNAMOORTHY. Thank you very much, Chairwoman Maloney.

I would like to now recognize Ranking Member Jordan for an opening statement, if you wish.

Mr. JORDAN. Thank you, Mr. Chairman. I'm fine. Our ranking member, Mr. Comer, has said what needed to be said. Thank you.

Mr. KRISHNAMOORTHY. Really? This is the first time I have ever heard you say that. Thank you. Thank you, Mr. Jordan.

Well, our first panel today should have had the opportunity to—should have been our opportunity to hear from Alex Gorsky, the CEO of Johnson & Johnson. Mr. Gorsky was aware of our interest back in March and said that our committee needed to hear their side of the story. We invited Mr. Gorsky to come before us one month ago, and yet Mr. Gorsky is not here.

Mr. Gorsky can still make this right. He can respond quickly and thoroughly to our document requests, and he can come testify before us at a future hearing, because we will continue to examine this issue, because it is not going away. Too many people are demanding too many answers to important questions, and the safety of Johnson & Johnson's talcum-based cosmetic products is now in serious doubt. Too many people have come forward with evidence of being harmed by these products. Consequently, this issue is not going away, and this committee will press forward with its inquiry.

With that, we will adjourn this panel and ask that the expert witnesses come forward to commence the next panel. Thank you.

Mr. KRISHNAMOORTHY. Thank you. We will now resume our proceedings.

Today, we are joined by a panel of witnesses that will help us examine the best methods to detect asbestos in talc.

Mr. David Etheridge, a Presbyterian pastor joining us from Norfolk, Virginia, will speak about his personal struggles to overcome mesothelioma, which he believes could have been prevented if more sensitive test methods were standardized to test for asbestos in talcum powder.

Dr. William Longo is a lab scientist at Material Analytical Services, LLC, which has tested decades of samples of Johnson & Johnson's talc-based baby powder. He will share his disturbing findings with us, detecting asbestos in the majority of Johnson & Johnson's samples that he tested.

Dr. Jacqueline Moline is the chairperson of the Department of Occupational Medicine, Epidemiology, and Prevention at the Donald and Barbara Zucker School of Medicine at Hofstra University. She is also the director of the Northwell Health Queens World Trade Center Health Program and the director of the New York state-funded Occupational and Environmental Medicine of Long Island clinical center. She will share her insights from a published case study of 33 patients with mesothelioma, male and female. She will speak about their exposures to talc-cased powders and what broader lessons we must understand for public health.

Last, Dr. Rod Metcalf. He's a geologist from the University of Nevada, Las Vegas. Dr. Metcalf will help us understand the genesis of naturally occurring minerals often found in nature together, talc and asbestos, and the dangers both pose.

If you would all please rise and raise your right hands, I will begin by swearing you in.

Do you swear or affirm that the testimony you're about to give is the truth, the whole truth, and nothing but the truth, so help you God?

Let the record show that the witnesses answered in the affirmative.

Thank you, and please be seated.

The microphones are sensitive, So please speak directly into them. Without objection, your written statements will be made part of the record.

And with that, Dr. Longo, you are now recognized for five minutes.

STATEMENT OF DR. WILLIAM LONGO, SCIENTIST, MATERIALS ANALYTICAL SERVICES, LLC

Mr. LONGO. Thank you, Chairman.

Mr. KRISHNAMOORTHY. You have to press the button. Sorry.

Let me just explain the lighting system here. Press the button to speak. Green means go. Yellow does not mean to stop; it means speed up. And then red obviously means please conclude. OK? So you have five minutes to speak. Thank you.

Mr. LONGO. Thank you, Chairman and ranking members and—Ranking Member and esteemed members of this subcommittee for giving me the opportunity to discuss the best methods for determining asbestos in cosmetic talc.

My name is William Longo. I have a Ph.D. in the area of material science and engineering. And I am the president of Materials Analytical Services, LLC, or simply MAS. I've been involved in asbestos analysis and research for over 30 years now. I have testified on behalf of both plaintiffs and defendants in asbestos cases.

Independent labs throughout the country and over the course of several decades have documented the presence of asbestos in consumer talc products, including Johnson's baby powder. AMA Analytical, Forensic Analytical, MVA Scientific Consultants, our own lab MAS, and Johnson & Johnson's own consultants, Colorado School of Mines, Dartmouth University, McCrone Associates, Rutgers University, the RJ Lee Group and others have all documented asbestos in Johnson's and other manufacturers' talc products over the course of decades.

The talc industry has, in that time, accumulated hundreds, if not thousands, of testing results that report no detectable or no quantifiable asbestos. These reports regarded by manufacturers as negative are very misleading, as they result from analytical mythological techniques with poor detection limits.

The question I would like to address in my testimony today is why the testing methods adopted and used by the cosmetic talc industry have regularly failed to detect asbestos and what improved, through certainly not new, test methods can help ensure that we are doing our best to find asbestos in talc.

The answer, in short, is straightforward and should not be controversial to anyone. The methods used in the past and today by the industry are not sensitive enough to detect trace levels of asbestos. We should have analytical methods that achieve the highest degrees of sensitivity and the lowest detection limits plausible. Let me explain.

The first thing to understand is that asbestos fibers are very small and virtually weightless. They're measured in picograms or trillionths of a gram. Millions and millions of asbestos fibers can

be present in a single gram of talc, even if the total asbestos by weight is less than 0.01 percent. So good analytical sensitivity is extremely important when looking at very small samples at very low weight percentages.

Analytical sensitivity is simply how many asbestos fibers must be present in the talc sample for the analyst to see a single fiber.

The laboratories used by the talc industry, and recently by FDA contract laboratory, have very poor analytical sensitivity, with detection limits of approximately 10 million to 14 million asbestos fibers per gram. That means that for the microscopist to detect a single asbestos fiber in the talcum powder sample, that needs to be between 10 million to 14 million asbestos fibers present per gram.

So any analytical method for the detection of asbestos in talc must have good sensitivity, but good sensitivity does you no good if your sample preparation method doesn't allow you to see the asbestos in something that is 99 percent talc.

It's been estimated that for every one asbestos fiber in cosmetic talc, there are 600,000 talc particles. These big plates of talc prevent the analyst from being able to see the asbestos, another reason for poor analytical sensitivity.

This problem can be solved with a sample preparation method called heavy liquid separation, HLS. This technique can separate and remove substantial amount of the talc, leaving behind any amphibole asbestos that might be present, making it far easier and quicker analysis, along with substantially better sensitivity.

As stated, the industry analytical sensitivity is between 10 million to 14 million asbestos fibers per gram. Our laboratory, using the HLS sample preparation method for cosmetic talc and TEM samples, we have been able to increase that analytical sensitivity to approximately 4,500 asbestos fibers per gram. Using HLS, we have detected amphibole asbestos in approximately 65 percent of all the cosmetic samples we have analyzed in the last three years.

The HLS method is not new to Johnson & Johnson or to the talc industry. In the early 1970's, both the Colorado School of Mines and Dartmouth University successfully developed an HLS method and presented it to J&J. The company never adopted the method, stating in the early 1970's memo that it may be too sensitive and not in their best worldwide interest to employ.

Last, if the cosmetic powder manufacturers insist on continuing to use their talc in their cosmetic products, it is vital to the public safety that the most sensitive method must be required. At this time, there is no dispute that this is the HLS preparation method with analysis by TEM.

An important caveat: Even using the best method, one can never state that cosmetic talc does not contain asbestos, only that the results fall below the detection limit. The only true solution to this problem is to ban the use of talcs in cosmetics products.

Thank you, Representatives.

Mr. KRISHNAMOORTHY. Thank you, Dr. Longo.

Next to Dr. Moline.

STATEMENT OF DR. JACQUELINE MOLINE, PROFESSOR, FEINSTEIN INSTITUTES FOR MEDICAL RESEARCH AT NORTHWELL HEALTH

Dr. MOLINE. Good afternoon, Chairman Krishnamoorthi, Ranking Member Jordan, Mr. Comer, and members of the committee. I'm honored to be here today. My name is Dr. Jacqueline Moline. I'm a board certified physician at Northwell Health, specializing in occupational and environmental medicine which deals with the impact of exposures on the health of individuals, including asbestos.

Asbestos has caused thousands of deaths in the United States. Legislation pending, the Alan Reinstein Ban Asbestos Now Act of 2019 is currently under consideration by Congress. It is time for us to ban this deadly substance.

Asbestos fibers are microscopic. About 200,000 asbestos fibers could fit on Abraham Lincoln's nose on the penny. Once these fibers are breathed in, they can penetrate deeply in the lungs and move throughout the body.

The most devastating disease from asbestos is mesothelioma, which is a cancer of the lining of the lungs or the abdomen. It's considered a signature disease, meaning its diagnosis almost always indicates asbestos exposure. As a result, treating doctors ask patients diagnosed with mesothelioma whether they were exposed to asbestos.

For men, the evidence is often easy to identify. Many of my patients sought care because they knew they'd worked with asbestos. For women, sometimes it's easy to identify, because they lived with someone who worked with asbestos and they laundered their dusty clothes. Yet for many women and some men, they had no traditional source of asbestos exposure. As a result, their cancers were considered idiopathic or having no cause. There's no sound scientific reason for a gender discrepancy, apart from workplace exposures and could not be explained merely by chance.

In my opinion, this conundrum has been solved. The presence of asbestos in cosmetic talc more commonly used by women is likely the cause of women's mesothelioma and men's mesothelioma. This talc exposure was their only exposure to asbestos. If doctors aren't aware that asbestos contaminated talcum powder, they don't ask about its use, nor consider it as a source.

To my knowledge, there have been no studies that look at end users of cosmetic talcum powder, but to address this gap, I recently published an article in the Journal of Occupational and Environmental Medicine. My colleagues and I reported on 33 individuals whose only source of asbestos exposure was the cosmetic talc. For six of the 33, we tested their tissue and found asbestos in talc. Years before, other scientists too had looked at lung burdens of women with mesothelioma, found the types of asbestos commonly found in talcum powder, and stated that the asbestos might be used—might be related to their use of contaminated talc.

I'd like to tell you about Ms. D, who is a 66-year old woman who developed shortness of breath, chest wall pain, weight loss, and fatigue. A chest x-ray showed fluid surrounding her lung, and she had 1,600 milliliters of fluid, more than about seven of these water bottles on this table in front of me, removed from her lungs. She eventually had surgery to take tissue samples for diagnosis and

had mesothelioma. She also had a pleural plaque, which is a hallmark finding of prior asbestos exposure. Unfortunately, despite aggressive treatment, she passed away two years after her diagnosis.

She had worked in various industries, including textile and tobacco, and had no exposure to asbestos. However, she did have exposure to cosmetic talc in two settings. She worked part time as a hairdresser for 25 years, and she applied talcum powder to her customers' necks after she cut their hair. She used cosmetic talc on her body for 30 years, beginning with when her mother used talcum powder on her and she later used it on herself. She stated there would be a puff of smoke and it went everywhere. Now, asbestos can linger after that initial application and affect not only the health of the user, but also family members.

In our study, the age of diagnosis was 27 to 88 years. The average number of years of cosmetic talc use was 32.7.

Cosmetic talc use was not confined to one brand. There were 22 different brands used. Like Ms. D., patients often used more than one type of cosmetic talcum powder.

Fortunately, mesothelioma is a very rare tumor. Around 3,000 new cases are diagnosed in the United States yearly. Unfortunately, it's not curable. Five-year survival for pleural mesothelioma is less than five percent. Peritoneal mesothelioma is somewhat better.

In 2019, the Finnish Institute for Occupational Medicine stated that asbestos fibers of a thickness of three micrometers or less and a length of five micrometers or more cause a risk of cancer and pulmonary diseases when inhaled, regardless of whether they've been formed as a result of geological process metamorphosis or an industrial process such as in mining.

What matters to me as a doctor is not the nomenclature. Any particle of asbestos that's small enough to be inhaled is three times longer than it's wide, can cause disease, including mesothelioma. Using terminology to somehow differentiate whether a particle is asbestiform or cleavage fragment obfuscates the issue and is just semantics. If it can be breathed into the lung, the body doesn't care how the fiber grew. From a clinical perspective it's really quite simple.

Millions of individuals have been exposed to asbestos from contaminated talcum powder. There are safer alternatives on the market that don't contain talcum powder or asbestos. In my specialty, we strive to identify, treat, and prevent future illnesses related to exposures and hazards. If there's any possibility of the presence of asbestos, why should we take the chance?

Thank you. I'd be happy to take questions.

Mr. KRISHNAMOORTHY. Thank you, Dr. Moline.

Votes were called. We're just going to finish up the opening statements and then recess briefly.

Mr. Etheridge, you have five minutes.

STATEMENT OF DAVID ETHERIDGE, PATIENT

Mr. ETHERIDGE. Good afternoon, Chairman Krishnamoorthi and other members of the subcommittee. Apparently, quiet news days are hard to find around here lately, so I especially appreciate your presence today and your interest in this important topic.

I'm David Etheridge. I'm a Virginian and, for most of my life, a Presbyterian pastor, husband, father of two, and more recently, a grandfather.

At the age of 56, I was diagnosed with a rare and deadly type of cancer called peritoneal mesothelioma. Because the only known cause of mesothelioma is exposure to asbestos, my doctors and others quizzed me about my potential exposure. They asked about the places that I had worked and lived and school, where my family members worked, which dorms were my home during my stay at the College of William & Mary, trying to find some point of exposure to asbestos. They asked hundreds and hundreds of questions, but found no explanation.

As it turns out, my mother was a liberal user of powder, and throughout her life, she used it on herself, and when I was an infant, she used talc-based Johnson & Johnson baby powder on me quite liberally. From the day she brought me home from the hospital until the age of three, she and my older sister covered me with baby powder every time that they changed my diaper.

As an adult, trusting the product that had been used on me for so long, I used Johnson & Johnson baby powder on myself for a time, and my sister also used the powder on herself and now she has ovarian cancer, which makes you wonder, doesn't it?

Since then, I've learned that whenever talc is mined from the ground, it has impurities that are mined along with it, including asbestos fibers. It was these fibers that got into my system and migrated to my peritoneal cavity, which caused a slow-growing tumor that debilitated me at the height of my career. Baby powder containing talc was the source of my asbestos exposure and the cause of the cancer that will kill me.

Awaiting treatment, doctors withdrew six liters of fluid from my peritoneal cavity. This they did twice so that I could breathe until the surgery. And then I came here to the MedStar Washington Hospital Center where Dr. Paul Sugarbaker performed an 11-hour surgery on me, removing my spleen, my entire colon, the tail of my pancreas, and 6-1/2 pounds of cancer. He washed my insides with a strong solution of chemotherapy and then sewed me back together for a 20-day stay in the hospital.

On my 57th birthday, they sent me home with a tube in my arm for the liquid food and antibiotics that would keep me alive for the next month, after which I endured 15 weeks of chemotherapy and rehabilitation and total exhaustion. I lost 50 pounds.

After six months away from the church that I served, I returned to work; but nine months later, more cancer was found, cancer that cannot be remedied or radiated or cured. So I resigned my position and I ended the service that I had felt called to since the age of 16, and I made my preparations to die.

I understand that you all have friends who have cancer. I realize that 1,600 people die every single day from cancer, and I'm thankful that mesothelioma has not yet taken my life, but cancer was caused by a product that is used on the most vulnerable members of our society, infants. This is the cancer that will kill me. In fact, the people who apply these products, like my mother and sister, are completely unaware of the suffering that may occur or the death that may follow as a result of simply drying a baby's bottom.

My case illustrates the sad truth that we cannot trust the talc industry to regulate itself in this matter. Since 1906, we have known that asbestos is deadly, and yet somehow it has shown up in baby powder yet again. We owe it to our Nation's children, parents, and every other consumer to ensure that our baby powder is truly safe and asbestos-free. Despite decades of promises to do so, the industry has not regulated itself. Therefore, you must.

May God bless you in your work.

Mr. KRISHNAMOORTHY. Thank you, Mr. Etheridge.

Dr. Metcalf, you have five minutes.

**STATEMENT OF ROD METCALF, PROFESSOR, GEOLOGIST,
UNIVERSITY OF NEVADA, LAS VEGAS**

Mr. METCALF. Chairman Krishnamoorthi, Ranking Member Jordan, and members of the subcommittee, thank you for inviting me today. My name is Dr. Rodney V. Metcalf. I hold bachelors, masters, and Ph.D. degrees in geology. I have served on the faculty of the Department of Geoscience at the University of Nevada, Las Vegas, for nearly 30 years. My current research focus is on understanding the geologic processes responsible for the formation of amphibole asbestos.

I am here today to discuss the geological controls and processes that form talc and asbestos and the potential for talc and asbestos to coexist in talc ore and whether or not it is reasonable to expect talc ores to be free of asbestos minerals.

When processes in scale are considered, the probability that talc and amphibole asbestos coexist in talc-rich rocks is very high. Talc and amphibole asbestos minerals can and certainly do coexist at scales that cannot be separated during mining of talc. Though not impossible, it is improbable for geologic processes to produce 100 percent pure talc in mineable volumes.

Talc and asbestos are naturally occurring silicate minerals. Asbestos refers to six regulated fibrous minerals and include the serpentine mineral chrysotile and five fibrous amphibole minerals. While chrysotile is always fibrous, amphiboles occur in both fibrous and nonfibrous morphologies that leads to this issue of cleavage fragments which I'd be happy to discuss during the questioning.

Talc and asbestos are formed by water-rock interaction during a type of metamorphism called hydrothermal alteration. During this process, a preexisting rock called a protolith, or a first rock, is subjected to changes in temperature, pressure, and the infiltration of hot waters. These changes drive reactions where minerals and a protolith break down to form new stable minerals. The water has the capacity to alter the bulk chemical composition of the protolith by the addition and the removal of dissolved components as fluids flow through the rock over time.

When water-rock interaction produces significant shifts in protolith composition, the process is called metasomatism, and it's thought to be responsible for the production of talc-rich ores. Amphibole asbestos is formed by the same water-rock interactions that form talc.

The two questions of particular interest here today are: One, are talc-producing reactions linked to the formation of amphibole as-

bestos? In other words, might we expect to find amphibole asbestos in talc? The answer to this is yes.

Many talc-forming reactions involve the breakdown of amphibole under geologic conditions that are favorable for the generation of fibrous morphology, in other words, amphibole asbestos. For these reactions, incomplete reaction progress results in the retention of amphibole asbestos in talc-rich rocks. Talc-anthophyllite transition particles, which are well-known in the literature in talc ore, are interpreted as relics of these incomplete reactions.

The second question: Are there metamorphic processes capable of producing a rock of 100 percent pure talc, that is, a talc rock free of asbestos? The answer to this question is theoretically yes, but only under very specific conditions—geologic conditions. Talc can be produced by reactions involving the breakdown of carbonate minerals, a reaction pathway that does not pass through amphibole asbestos, as long as the process operates in a specific range of temperature.

Thus, metasomatism of carbonate protolith at a specific temperature could produce asbestos-free talc. However, if the process is started at a slightly higher temperature, amphibole asbestos can form. Talc containing amphibole asbestos is known from talc deposits formed by the alteration of these carbonate protolithologies.

Asbestos in cosmetic talc is considered a health hazard to consumers even at levels labeled as non-detect by the industry J4-1 method. We should not be surprised when more sensitive testing methods find asbestos present in talc ores and talc products, given that the formation of asbestos and talc are likely—are linked by common geologic processes.

Although we often refer to asbestos as a contaminant in talc, as though it were an introduced foreign substance, asbestos can occur as a relic component of the natural talc-forming geologic processes, and its presence should be anticipated.

Thank you for your time today. I'm available for questions.

Mr. KRISHNAMOORTHY. Thank you very much.

The committee will now stand in recess, subject to the call of the chair. I ask members to please return promptly after the vote series.

We'll be back shortly. Thank you.

[Recess.]

[2:45 p.m.]

Mr. KRISHNAMOORTHY. The subcommittee will come order.

Thank you so much, and sorry for the pause in the proceedings. What we are going to do is start with questions, and I now recognize myself for five minutes of questions.

Dr. Moline, is there any safe level of asbestos in consumer talc-based products?

Dr. MOLINE. No.

Mr. KRISHNAMOORTHY. And why is that?

Dr. MOLINE. There's no safe level of asbestos, period. It's a carcinogen. It's a type 1 carcinogen, and there should be no exposure.

Mr. KRISHNAMOORTHY. Dr. Longo, both the FDA and the EPA agree that there is no safe or acceptable level of asbestos for human exposure, correct?

Mr. LONGO. That is correct.

Mr. KRISHNAMOORTHY. In fact, just this past year, Johnson & Johnson's CEO, Alex Gorsky, was asked in a deposition whether asbestos is safe. He stated, quote: I would agree that asbestos is considered unsafe. I'm not an expert geologist or a safety expert in that particular area, but, generally speaking, we would say, yes, asbestos is not safe.

On October 18, the FDA announced it had detected asbestos in J&J's talcum powder. Dr. Moline, what is the significance of this announcement?

Dr. MOLINE. That, to this day, they're finding asbestos when they go off the shelf in talcum powder, and it's putting thousands, if not millions, of people at risk in the future.

Mr. KRISHNAMOORTHY. Dr. Longo?

Mr. LONGO. That is correct. And those results verify our results of finding amphibole asbestos in the Johnson & Johnson's product from the Chinese mine, which is the mine that's being used today.

Mr. KRISHNAMOORTHY. Dr. Longo, it's important that we have sensitive testing methods to detect any level of asbestos in consumer products, right?

Mr. LONGO. Yes, sir. That's correct.

Mr. KRISHNAMOORTHY. And you personally tested historical samples of J&J's talcum powder, correct?

Mr. LONGO. Yes, our laboratory has.

Mr. KRISHNAMOORTHY. And from what decades did you test this powder?

Mr. LONGO. We have analyzed samples from the forties all the way up to the 2000's, as well as the—as well as the current Johnson & Johnson products.

Mr. KRISHNAMOORTHY. And what did you find?

Mr. LONGO. Overall, 65 percent of all the samples we've tested were positive for regulated asbestos.

Mr. KRISHNAMOORTHY. Did you use the same asbestos detection methods as J&J?

Mr. LONGO. No, sir, we did not.

Mr. KRISHNAMOORTHY. And how did they differ?

Mr. LONGO. We used what is called a heavy liquid separation technique, which makes the analysis a lot more sensitive.

Mr. KRISHNAMOORTHY. And do you believe that sensitivity is essential to detecting asbestos in talc?

Mr. LONGO. Absolutely.

Mr. KRISHNAMOORTHY. Now, has Johnson & Johnson ever acknowledged any asbestos detection tests that have concluded that the company's samples contain asbestos?

Mr. LONGO. Not that I'm aware of.

Mr. KRISHNAMOORTHY. So just so I understand, you've tested historical samples from the forties through today—

Mr. LONGO. Correct.

Mr. KRISHNAMOORTHY [continuing]. using this HLS method of detection, and in those tests, you've determined 65 percent of those samples contain asbestos; but on the other hand, Johnson & Johnson has never acknowledged that any of their samples contain asbestos. How could that be?

Mr. LONGO. Not currently they haven't. Certainly, their—some of their testing have consultants in the past. They don't acknowledge

it. They say that what we are testing is really not asbestos, and now it comes down to the argument of what's the gee—excuse me—the geometry of the fibers versus what they call cleavage fragments?

Mr. KRISHNAMOORTHY. Okay. And why does that matter?

Mr. LONGO. Well, on our side, it doesn't matter, because we're following absolute regulated protocols to identify asbestos recognized by EPA, OSHA, the ASTM, as well as the International Standards Organization. It's a defining on what the definition is. It's misleading at best.

Mr. KRISHNAMOORTHY. Okay. Now, as you know, on October 18, FDA announced its contract lab found asbestos in J&J's talcum powder. Did FDA's contract lab, this is the AMA firm, did they use the HLS method?

Mr. LONGO. They did not.

Mr. KRISHNAMOORTHY. What kind of method did they use, do you know?

Mr. LONGO. I would call it the standard method where you have to find a needle in a haystack, and every now and then, you'll find that needle, but it's rare. And they've had a rare event, in my opinion, that they found the needle in this particular bottle.

Mr. KRISHNAMOORTHY. So what would have happened had they used the HLS method of detection, which is a much more sensitive method?

Mr. LONGO. If they had used that method as in its current state, they would not have found the chrysotile asbestos, but they could have found the amphibole asbestos, which is what that method is really designed for.

Mr. KRISHNAMOORTHY. And, again, tell us, what is the significance of finding one type of asbestos versus the other?

Mr. LONGO. No significance, because they're both regulated. The significance is, is that current products are being sold with trace amounts of asbestos in it.

Mr. KRISHNAMOORTHY. Just so I understand, either one would be carcinogenic?

Mr. LONGO. That's not my area, but I think Dr. Moline would tell you that either one is carcinogenic.

Mr. KRISHNAMOORTHY. Dr. Moline, do you want to tell us if either one is carcinogenic?

Dr. MOLINE. All of the forms of asbestos are carcinogenic.

Mr. KRISHNAMOORTHY. Thank you.

Let me now recognize Congresswoman Miller for five minutes of questions.

Mrs. MILLER. Thank you, Chairman Krishnamoorthi.

The Oversight Committee has long played an important part of overseeing the role government plays in protecting the public. Congress has mandated the Food and Drug Administration be the responsible one for regulating certain products, including consumer cosmetics that use talc. While the committee has the jurisdiction to complete this oversight on the possibility of asbestos in talc, today's hearing does nothing to accomplish that goal.

Johnson & Johnson has provided over 10,000 pages of material to the committee on their asbestos testing methods and have offered to provide over 300,000 more. My colleagues on the other side

of the aisle declined to receive them. Johnson & Johnson has also offered to have its own experts in asbestos testing appear in front of this committee to provide real documentation and evidence and, again, has been unfortunately denied.

This hearing does not help consumers, and it is neither the right forum nor the fair process needed to have this important conversation. It is inappropriate for this committee to attempt to influence ongoing litigation. Today's hearing is not the role of this committee, and I look forward to the opportunity to perform the oversight duties that the American people elected us to do in order to keep us safe.

Dr. Longo.

Mr. LONGO. Yes, ma'am.

Mrs. MILLER. Is it true in the early 2000's you testified under oath that talc containing asbestos was an urban legend?

Mr. LONGO. Yes, ma'am. Oh, sorry. Yes, ma'am, I did.

Mrs. MILLER. What has changed since then?

Mr. LONGO. What has changed since then is we've been using a much more sensitive method, and that was at the time that we did not receive or had the opportunity to look at thousands and thousands of Johnson & Johnson confidential documents showing that their own testing of their own products in their own mines had regulated asbestos in it, and we were not using the most sensitive techniques. And since that time, in three years, we have analyzed over 109 Johnson & Johnson bottles and found 65 percent of them positive for regulated asbestos using heavy liquid density separation and many other cosmetic talc companies.

Mrs. MILLER. How long has that testing been available?

Mr. LONGO. It was initially been available since, for Johnson & Johnson, when their consultants, in 1973 and 1974, developed a heavy liquid density separation method for amphibole asbestos and presented it to Johnson & Johnson.

Mrs. MILLER. But in 2001, when you were asked if you were familiar with the asbestos content of cosmetics, you said: In my field I have. It's sort of like an urban legend about the talcs in cosmetics containing tremolite. I've never been able to verify that.

Mr. LONGO. Yes, ma'am, I did say that back in 2001. And, again, that's before we received all the confidential documents from Johnson & Johnson showing that they had a heavy liquid density method separation process that was presented to them in 1973 and 1974, and Johnson—

Mrs. MILLER. Have you ever visited a talc mine that supplies Johnson & Johnson product?

Mr. LONGO. No, ma'am, I haven't.

Mrs. MILLER. Has your lab ever tested a Johnson & Johnson product that has been confirmed positive for asbestos?

Mr. LONGO. Yes. We have tested many Johnson & Johnson products that we have confirmed positive for asbestos, as well as other laboratories.

Mrs. MILLER. Dr. Moline, in your written testimony, you cite a study by Dr. Victor Roggli, but Dr. Roggli says that cosmetic talc does not cause cancer. Is that correct?

Dr. MOLINE. I'm not sure what study you're referring to. The study I was referring to was from early work he did where he analyzed the lung tissue of women with mesothelioma and——

Mrs. MILLER. This was 2019. Specifically, in August 2019, Dr. Roggli stated that he and his fellow researchers identify no evidence of any causative role of cosmetic talc in malignant mesothelioma—oma.

Dr. MOLINE. I think that doctors may disagree on that, and I think the weight of the evidence is to the contrary, but he's entitled to his opinion.

Mrs. MILLER. Thank you.

I yield back my time.

Mr. KRISHNAMOORTHY. Thank you, Congresswoman Miller.

Now, Congresswoman Pressley, you have five minutes.

Ms. PRESSLEY. Thank you, Mr. Chairman, for holding this important hearing today.

And, respectfully, I disagree with my colleague across the aisle. I think this is the very exact vehicle and forum where this sort of oversight is supposed to take place. This is the committee where we pursue truth and justice for the American people, and there has been a great injustice done to many, and so I'm grateful for the hearing today.

I find it insulting to this committee and to the men and women across this country whose trust in Johnson & Johnson has destroyed their lives or the lives of their loved ones. Today, we have heard brave testimony from people like Pastor Etheridge.

And let me say what Mr. Gorsky wouldn't. I'm sorry. Sorry for the pain you have endured, because you put your trust in a company that placed profits over your very life and safety.

When Johnson & Johnson asks people to trust them, the FDA should have said, show us. Show us that your products aren't hazardous. And when they refused to do this, when research showed that asbestos was showing up in their talc and baby powder, rather than inform the public through warning labels, Johnson & Johnson tried to discredit it. They looked for ways to sell more of it, and they set their sights on Black and Hispanic women.

Mr. Gorsky, I hope you are watching today, because we still want answers. And that's exactly why Representative Schakowsky of Illinois and I earlier submitted a letter that we plan—submitted a letter so that we can continue to get to the bottom of this and to demand answers and accountability for those who have been harmed by Johnson & Johnson because of their company's greed, and they deserve to be held accountable.

Pastor Etheridge, I know you had to step away from the pulpit, but I could argue as a woman of faith that your ministry continues as evidenced by your testimony here today.

Could you share with us, what were your initial symptoms?

Mr. ETHERIDGE. My initial systems were unexplained weight loss. I never lost weight by accident in my entire life. I had fever, shortness of breath, and fatigue.

Ms. PRESSLEY. And so—and was there—was there any other context around this? Were you going on a trip or something or——

Mr. ETHERIDGE. We were on vacation in Hawaii——

Ms. PRESSLEY. Okay.

Mr. ETHERIDGE [continuing]. and had some—I was taking antibiotics and my symptoms, instead of getting better, were getting worse, and so we went to an ER and I was diagnosed with cancer at that time. It was later determined, upon my return home, that it was mesothelioma.

Ms. PRESSLEY. Thank you.

I have some more questions and, due to the interest of time, if you'll please try to answer them as succinctly as possible, preferably with a yes or no answer.

Did you consult additional doctors when you returned from vacation?

Mr. ETHERIDGE. Yes.

Ms. PRESSLEY. Did your doctor discuss with you the causes of mesothelioma?

Mr. ETHERIDGE. Yes.

Ms. PRESSLEY. Have you ever been exposed to asbestos in your profession as a pastor?

Mr. ETHERIDGE. No.

Ms. PRESSLEY. How long have you been a pastor?

Mr. ETHERIDGE. I was a pastor for 33 years.

Ms. PRESSLEY. How often in adulthood would you use Johnson & Johnson's talcum baby powder and for what purpose?

Mr. ETHERIDGE. Maybe two or three times a week to powder my genitals after I showered.

Ms. PRESSLEY. Common.

Again, I'm so sorry for the pain you have endured. As a lawmaker, I know the power of having those closest to the pain driving our policy solutions, as well as the general accountability, given the jurisdiction or reach of this committee.

So just for the record, and you spoke to this in your earlier testimony, but I think it bears repeating, Pastor Etheridge, do you believe Johnson & Johnson's talc-based baby powder caused your mesothelioma?

Mr. ETHERIDGE. Yes, I'm convinced of that.

Ms. PRESSLEY. And if you had the opportunity to make policy changes to prevent other people from using products that cause mesothelioma, what would you do?

Mr. ETHERIDGE. At the very least, we should regulate the use of talc or add warning labels to the products, but, ideally, we need to get this stuff off the shelves.

Ms. PRESSLEY. All right. Well, we'll certainly do everything we can to ensure justice for you and your family. God bless you.

Mr. ETHERIDGE. Thank you.

Ms. PRESSLEY. Thank you. And I yield.

Mr. KRISHNAMOORTHY. I thank you Congresswoman. I'm going to use the remainder of your time for a couple of questions here.

Dr. Longo, when was the first known reporting of asbestos in J&J's talcum powder made public?

Mr. LONGO. The first reporting, I guess—I keep forgetting it.

The first reporting I think was only recently public.

Mr. KRISHNAMOORTHY. And was that positive asbestos finding conducted by an independent lab?

Mr. LONGO. Yes, sir, it was.

Mr. KRISHNAMOORTHY. And let me ask you this. In response to a couple of questions that you were asked, I think that they mentioned that earlier in 2001, you had indicated that you weren't aware of asbestos in talc powder. But then after reviewing documentary evidence, as well as conducting additional tests, you then learned of the presence of asbestos in talc powder.

Do you want to say anything more about that?

Mr. LONGO. Yes. It was early on and, as scientists, we keep our minds open. And then there—there was a published paper in 2014/2015, and then I became interested in it. And then finally in 2016, decided to go ahead, but had to look for a more sensitive method, and that's where the L—the liquid heavy density separation method came in.

Mr. KRISHNAMOORTHY. Thank you, Dr. Longo.

Now I will recognize Mr. Grothman for five minutes.

Mr. GROTHMAN. Thank you. This is a very interesting committee on oversight. You never know what you're going get. A different topic every day.

I'm a little bit disappointed here, and I'll say this because, of course, people back home are watching, this being filmed and we have four people testifying today.

As I understand it—and, of course, you know, we sometimes meet with people in our offices prior to these hearings—Johnson & Johnson had an expert they wanted to have testify. I understand majority party wanted Mr. Gorsky, I think was his name, the CEO, to testify, but not surprising, Johnson & Johnson wanted an expert. And I see we have three doctors testifying today. They wanted their own expert to be able to testify. It was the two sides to every story. I think their expert was a woman by the name of Kathy Widmer. And for whatever motivation, Kathy is not here today. She was not allowed to testify.

And I think it's disappointing, because I came here open-minded. I wanted to hear both sides of the story. I assume there's both sides to the story. As I understand it, there are four or five times in which an appellate court has ruled on this situation, and all four or five times, they've ruled in favor of Johnson & Johnson.

Now, I'm as jaded about courts as anybody, but I assume that when people have—when judges have time to review briefs, maybe read hundreds of pages on this topic, and they decide against the plaintiffs, there's something there. There's a story that I should be able to hear. And I resent a little bit of the fact that I'm not able to hear that story.

I don't think it's out of line for Johnson & Johnson to say we don't want our CEO to testify. We have three doctors testifying, and we want our own doctor, but we didn't hear their own doctor.

And I'll just say one more time that that's disappointing.

Mr. GROTHMAN. And in case anybody is paying attention to this hearing—paying attention to this hearing at home, for our home viewing audience, that they are aware that we're getting one side of the story today. I'll plunge ahead with that one side and see what I can hear from these folks.

As I understand it, four or times on appeal, judges decided that plaintiffs did not have a strong enough case or ruled against plaintiffs. I have other questions too, but I'll ask—because we don't have

the people on Johnson & Johnson's side here, could I ask, say, Dr. Longo, why on appeal does Johnson & Johnson seem to keep winning these cases?

Mr. LONGO. And, again, my understanding is the appeal had to do with jurisdiction issues, not anything to do with the science, and that's just my understanding.

Mr. GROTHMAN. Okay. And they sometimes won before juries as well. Again, juries don't always get it right, but they're juries who listen to all of the evidence, not just, you know, five-minute questions from Congressmen, and they are sometimes deciding that Johnson & Johnson has not done anything wrong in these cases.

Dr. Longo—and I hope this isn't true, but, you know, we're provided some stuff in advance here. You own a company, MAS, or have a 75 percent in MAS. Is that true?

Mr. LONGO. Yes, sir, I do.

Mr. GROTHMAN. Okay. And MAS makes money testifying or providing evidence before trials of this nature?

Mr. LONGO. Yes, sir. We do provide experts the bill for their time.

Mr. GROTHMAN. Yes. Could I find out how much on these cases, how much you've billed out total to—to claim that Johnson & Johnson is negligent in these cases?

Mr. LONGO. I believe MAS has billed for all its research and development and—and sample analysis and——

Mr. GROTHMAN. A hundred thousand? A million? Ten million? Thirty million? I mean, there are all sorts of numbers around out there. How much have you guys about billed out on this—on this matter?

Mr. LONGO. I would estimate in the two years—2017, 2018 and 2019, I would estimate somewhere a million, a million-point-2.

Mr. GROTHMAN. Okay. That's——

Mr. LONGO. I think. That's an estimate.

Mr. GROTHMAN [continuing]. total of—now, somebody gave me something. Maybe they're lying. They're saying total MAS may have billed out as much as 30 million, but you're saying it's only 1 or 2 million?

Mr. LONGO. Well, that's two different questions. MAS started in 1988, and for 31 years, we've probably—we have—we have averaged a million dollars in litigation. But you have to understand, we're a 20,000-square-foot laboratory, we have 43——

Mr. GROTHMAN. I understand you have got expenses. You—when people tell me that you might have billed out 30 million to take a side on this matter, are they lying to me, or is it about 30 million?

Mr. LONGO. I won't call somebody a liar, but that's just not true. If I had billed personally \$30 million——

Mr. GROTHMAN. Not personally. The company.

Mr. LONGO. If the company had billed—the company has not billed \$30 million involved in Johnson & Johnson——

Mr. GROTHMAN. Twenty million?

Mr. LONGO. No. I would say in the three years for the Johnson & Johnson litigation——

Mr. GROTHMAN. Total.

Mr. LONGO [continuing]. maybe 1.5 million.

Mr. GROTHMAN. Okay. Thank you much.

I hope some day we do have a chance to hear from Ms. Widmer. Mr. KRISHNAMOORTHY. Well, thank you.

And the minority always has the option to provide a witness. They declined to do so today. Nobody.

Now we're going to call on Congresswoman Tlaib for five minutes.

Ms. TLAIB. Thank you so much, Chairman. I do sincerely appreciate you using this committee to kind of elevate the voices of people like the pastor here and others that have been impacted.

I think it's really hard for me to sometimes sit here and hear folks, you know, kind of be the—the defendant lawyers for the corporations. I mean, how much money, millions and billions of dollars, did Johnson & Johnson make in poisoning people? I mean, literally why aren't we asking that question?

Because I—you can't get away from the facts. FDA found asbestos in baby powder. Now remember, it's baby powder; it's not even—it's baby powder. Not only that, they later on—furthermore, reports state that the asbestos was detected in one of the tests Johnson & Johnson itself conducted using sample from the same bottle as the FDA, okay? Fact. Okay? FDA is coming to us saying this, okay? Are we going to say, oh, is FDA getting paid? No. These are—these are folks that are coming in trying to protect the public. That is our job. That is our job, to protect the public.

Reports show that Johnson & Johnson contracted with RJ Lee Labs. RJ Lee reportedly deviated from its standard testing procedures in order to deliver rushed results at the request of the company. Check this out. An RJ Lee scientist stated that Johnson & Johnson wanted, quote, very rapid turnaround for obvious reasons. Then the lab found asbestos in its sample, but later retracted its results and claimed that initial false detection was due to environmental contaminants in one of its testing rooms.

Johnson & Johnson discredited its own company that they hired and contracted out. They discredited RJ Lee's initial finding, blaming the asbestos detection on all kinds of stuff that is, you know, what we say in Detroit, BS.

Dr. Longo, have you evaluated this particular RJ Lee testing report?

Mr. LONGO. Yes, I have.

Ms. TLAIB. Yes. I mean, do you see what's the problem here? I mean, they found asbestos, correct?

Mr. LONGO. They detected asbestos in the actual talc samples, and then their controls are blanks. When they were analyzed, they did not detect asbestos.

Ms. TLAIB. And samples of a bottle of Johnson & Johnson baby powder have tested positive in two separate labs, correct?

Mr. LONGO. I know—yes, in the AMA lab as well as the RJ Lee lab.

Ms. TLAIB. And Johnson & Johnson proceeds to accuse both labs of being contaminated with asbestos.

Mr. LONGO. I know.

Ms. TLAIB. Dr. Longo, I mean, wow. Like, I am just—you know, I've only been here a year, but I'm just so taken aback that my colleagues don't even see it. I can't even make this stuff up. This is factual. I can't even make it up.

These FDA folks, they're not Republicans or Democrats. They're government officials that are doing their jobs, right, Pastor? I mean, that's what they're supposed to be doing. They're public servants. They're doing exactly what they were hired to do, which is protect the public. And I am just taken aback that my colleagues who represent—each of us represent close to 700,000 people back home, that doesn't expect us to be defendant lawyers for Johnson & Johnson who basically poison people. They expect us to defend them, to protect them. And we have to be—realize, like how much money did they make off of the human suffering of people?

My God, Pastor, 33 years, pastoring people. You know, I hope this is—like, this for you is—you are continuing your work for the people by—by talking about this in a very profound way through your own personal experience.

But I am just—you know, Chairman, I cannot stress enough just how important it is that this committee is used for good.

And that's exactly what we're doing. We're sharing exactly what is happening to people because of this. And they want to come up with these kinds of little conspiracy theories and all this other stuff. The fact of the matter is FDA found asbestos in the testing. Two companies that Johnson & Johnson hired found asbestos. How much more testing do our people need? How much more? Enough is enough.

And so I just urge my colleagues to support the chairman as he proceeds to find the truth. And I'll tell you, I've been here—they have every opportunity to bring their own witness forward. I actually went and asked staff who is their witness. They said they don't have one. They had every opportunity, the Republicans, to actually put somebody up here to talk about this.

So I obviously am very passionate about this. I can just tell you, you know, from my district of folks—I have the third poorest congressional district in the country. Very strong, resilient people. They are the people that got targeted by Johnson & Johnson. They're the ones that they thought was disposable for profits. So I'm not going to keep my mouth shut or try to say, well, this ain't fair. No, if the FDA found asbestos, shouldn't that be enough?

Thank you, Chairman.

Mr. KRISHNAMOORTHY. Thank you, Congresswoman Tlaib.

We're just going to go to a second round of questions and then finish up here.

It is true the minority did not call a single witness, whether it was from Johnson & Johnson or anybody. So they had the opportunity and they declined. And, of course, as we know, the CEO has opined on this issue multiple times. He'll go to the media, he'll go in other forums and talk about this, but he doesn't want to talk about it in Congress. And that's a problem.

Now, let me just ask a couple more questions here.

Mr. Etheridge, at the time that you had used Johnson & Johnson's baby powder, did you have any inkling whatsoever about this presence of asbestos in its powder?

Mr. ETHERIDGE. There was no reason for me to suspect this hazard. They're known as the baby company.

Mr. KRISHNAMOORTHY. In fact, they advertise the powder in a way that makes it seem like it's as pure as any—any material out

there, and obviously that's why moms and families apply it to babies, right?

Mr. ETHERIDGE. I used it on my own children.

Mr. KRISHNAMOORTHY. Sure. And I think that—I hear some of my colleagues saying the same thing. And I think generations of families have used it, around the world.

Dr. Longo, you know, I wanted to ask you a little more about your testimony with regard to your own practice. I think the other side wants to make a big deal out of your prior testimony. Would you like to comment on I think their suggestion that somehow your testimony is really motivated by money as opposed to what you've discovered in your scientific testing?

Mr. LONGO. No, our practice is not motivated by money. We do participate in litigation, but our company testifies for both plaintiffs and defendants over the last 30 years.

We have to charge for our time. We have to pay for the electron microscopes. We have to pay for the optical microscopes. We have to pay the rent. I'm not sure a lot of these folks understand what it takes to run a small business.

We go with every type of analysis we do with the utmost integrity. I had no idea back in the day that cosmetic talcs would have this kind of asbestos levels in them. It wasn't until I got interested in it and realized that it was the detection limits that was the problem, that the trace amounts of asbestos in the detection limits was causing every—all the labs that were analyzing it at the time to think there was nothing there.

Using the best detection method, we're now seeing that these accessory minerals—tremolite, actinolite, and anthophyllite—are there. And you can't predict when you'll find it or not. It's almost ubiquitous. The only way to get rid of the problem and to assure, in my opinion, that there is no more exposures to this, is to eliminate talc from these cosmetic products.

Mr. KRISHNAMOORTHY. Okay. Dr. Moline, it's pretty clear that mesothelioma can only be caused by one material, and that is asbestos, correct?

Dr. MOLINE. That's basically true. There's some evidence that folks who have undergone therapeutic radiation may be at increased risk. There's no studies that look at the combination of those two. There are some folks that have had both and is at an increased risk.

In terms of outside products, in the United States, asbestos is the only product that we're aware of that causes mesothelioma, although there is some question of some other minerals like taconite that's found in Minnesota.

Mr. KRISHNAMOORTHY. I see.

Dr. MOLINE. But it's about 99 percent or more.

Mr. KRISHNAMOORTHY. Okay. And, Dr. Metcalf, I think that you talked about the mineral mining, and I think maybe some of my colleagues will talk about this a little bit further. But talc and asbestos are naturally occurring together, correct?

Mr. METCALF. That's correct.

Mr. KRISHNAMOORTHY. It's like you can't mine talc without mining asbestos in the same process?

Mr. METCALF. Well, I did outline a very narrow set of conditions where talc might be produced without—at least amphibole is what I actually—without asbestos. But for most of the geologic settings where talc forms, we very much expect to find asbestos minerals with it, because it is—it is the amphibole minerals that are breaking down to form talc.

Mr. KRISHNAMOORTHY. I see. And in this particular—

Mr. METCALF. And let me add that these processes are taking place at—almost at the atomic scale that these minerals are growing, but we are mining this stuff with drills and front-end loaders and blasting and dump trucks. And so to be able to assure, the way Dr. Longo does, that the material we're mining is free of this, we need to test lots of it, because there's lots of heterogeneities too. We may test one sample and it may be pure talc; we may test another sample and it could be—have asbestos in it. And so it's the heterogeneities that make this a real problem.

Mr. KRISHNAMOORTHY. Very good.

Now I'll recognize Congresswoman Pressley for five minutes.

Ms. PRESSLEY. Thank you, Mr. Chairman.

I want to say I associate myself with the impassioned Detroit tell-it-like-it-is comments of Representative Tlaib a moment ago, and completely dissociate myself with the comments offered by my colleague across the aisle. I find that I have that dual experience often on this committee of comparable pride of our honoring the words of our late chairman in being in efficient and effective pursuit of the truth and simultaneous shame with all of the efforts to obstruct the work of this committee to get to the truth.

But since there was a desire expressed earlier to center the science, I'd like to ask some line of questioning in line with that.

It is reported that Johnson & Johnson's talc tested positive for asbestos as far back as 1957 and 1958. Yet on more than one occasion, labs have tested samples from the same bottle of Johnson & Johnson's talc-based powder and come to different conclusions.

As Representative Tlaib mentioned in her impassioned testimony or statement, Johnson & Johnson commissioned its own studies with samples from the same bottle and predictably announced their samples tested negative for asbestos. Notably, Johnson & Johnson's own commissioned lab also detected asbestos in one of the company's samples, yet later attributed the false positive to environmental contaminants of an air-conditioning unit.

Dr. Longo, how are divergent detection results possible when two samples from the same bottle are tested for asbestos?

Mr. LONGO. If you have trace levels and you are using an unsensitive method, you can have where one sample will be detected and then another aliquot you may not see that. So it's very hard to say, especially if you have a laboratory that did detect it, then didn't detect it. So you can't really compare apples to apples here.

Ms. PRESSLEY. Mr. Metcalf, geologically, how closely related are talc and asbestos?

Mr. METCALF. Very closely related. As I said, many of the reactions that form talc, the metamorphic reactions that form talc, are breaking down amphibole—an amphibole under the kinds of conditions that make them fibrous.

And I'll say, I actually came to this, not—to look at talc not because I was interested in talc, but because I was interested in understanding why amphiboles, which are sometimes fibrous and sometimes are not fibrous, why are they fibrous, what controls it. And as I started to do literature review—and there's a lot of papers published in the seventies and eighties and then in the early nineties that looked at this with high-resolution transmission electron microscopes. And I kept running into textures and understanding that we went from nonfibrous to fibrous amphibole to talc, and it was a reaction sequence that ended in talc.

And that's what really got me interested. And I really wasn't paying attention to the talc stories and any of the stuff until I kept running into this in the literature. And so, yes, asbestos and talc are linked by geologic processes.

Ms. PRESSLEY. And so talc and asbestos evolve from the same protolith?

Mr. METCALF. Yes, that's correct.

Ms. PRESSLEY. Okay. And so what environmental processes caused the protolith to evolve into asbestos and talc?

Mr. METCALF. So the process that's involved in this most of the time, as I talked about, is something called hydrothermal alteration. It's a type of metamorphism when a preexisting rock, the protolith, is subjected to differing conditions of pressure and temperature, and particularly fluid flow. So over the course of the metamorphism, fluids are passing through the rock, and it's the reaction of those fluids with the protolith that drives these processes. All these minerals are hydrous minerals.

Ms. PRESSLEY. So during the rock evolution, asbestos can eventually become talc?

Mr. METCALF. Right. Right. And I'll add one thing is that—again, I said this in my opening statement. We often talk about asbestos as being a contaminant in the talc, as though it were—fell out of an air conditioner, for instance, some foreign body that was introduced. But the reality is, is the way that talc forms, it forms—the road to talc leads through amphiboles and amphibole asbestos. And so it's a relic of the geologic process, not a contaminant from some foreign body.

Ms. PRESSLEY. Okay. So, again, just to be clear—this will be my final question. So is it the case and accurate to say that talc cannot reliably be asbestos-free?

Mr. METCALF. Well, I wouldn't go quite that far. There are some—as I said, there are some reactions that have the potential—and it's been reported that there are asbestos-free versions. There's a mine in Montana. However, I don't think anybody has ever tested it to the sensitivity that Bill Longo has been discussing.

So I think, of the ones that people say are asbestos-free, I think that's not been demonstrated. I think the responsibility is to—is to do the best testing possible and make sure that these things are—are asbestos-free. But I would—I would be surprised if we could find any that's asbestos-free.

Ms. PRESSLEY. Thank you.

I yield back.

Mr. KRISHNAMOORTHY. Thank you, Congresswoman.
And now Congresswoman Tlaib, five minutes.

Ms. TLAIB. Thank you so much, Chairman.

I do want to submit for the record, if there's no objection, a Mother Jones article where it shows that Johnson & Johnson has poured money into directly influencing Federal lawmakers. So far this year, the company has spent \$100,000.

Mr. Chairman, I'd like to submit the article.

Mr. KRISHNAMOORTHY. Without objection, so ordered.

Ms. TLAIB. Also, I'd like to submit a press statement from the Michigan attorney general, Dana Nessel, who announced a \$3 million share of a multistate settlement with Johnson & Johnson and its subsidiary.

According to—is that Okay?

Mr. KRISHNAMOORTHY. Without objection, so ordered.

Ms. TLAIB. Thank you, Chairman.

But according to this statement, it looks like Johnson & Johnson and its subsidiary is to pay over \$3 million for their deceptive marketing of transvaginal surgical mesh devices. The total multistate settlement is nearly \$116.9 million.

I just want to show a pattern of this company. And I know it has—but this is very critically important to show. Now they actually have subsidiaries so that we have to now worry about whether or not in those instances that they're exposing people to devices and to chemicals that are very toxic and harmful.

I know that we've been talking a lot about testing, which I think is really critically important, because it gives credibility to the pastor's claim as well as others who have come forward and said, you know, I'm sick because of being exposed to this product.

In 2009 and 2010, FDA conducted a survey of talc products for asbestos testing. And records show that FDA selected AMA Labs to conduct its testing for all three surveys.

And then just last month, AMA detected asbestos in a sample of Johnson & Johnson's talc powder. In its public—it's called request for quote—solicitation posting for asbestos testing, the FDA stated, and I quote, it is now apparent that detection of asbestos in cosmetics demands using the most sensitive asbestos testing methods available.

Dr. Longo, your lab conducts these kinds of testing. Are you familiar with this at all?

Mr. LONGO. I'm familiar with that—you know, I have a big note that says push talk button.

Ms. TLAIB. Oh, that was me the first month, sir, so don't worry about it.

Mr. LONGO. I'm very familiar with the testing, I'm very familiar with that request for proposal, and I'm very familiar with the detection limits that AMA has for the analysis they did in 2010.

Ms. TLAIB. Yes. So does AMA Labs, the lab FDA has consistently contracted with since 2009, employ what you consider the most sensitive asbestos testing methods available?

Mr. LONGO. No, they're not. Their 2010 work for FDA, their detection limit was approximately 10,000—excuse me—10 million asbestos fibers per gram of talc to find one fiber.

Ms. TLAIB. Wow. Would FDA have detected asbestos in these samples earlier in the time if they used more sensitive detection methods?

Mr. LONGO. In my opinion, yes.

Ms. TLAIB. Is there scientific consensus as to which asbestos detection method is more sensitive?

Mr. LONGO. I believe the consensus would be that the heavy liquid density separation for electron microscopy. It is a standard method now for the International Standards Organization that has a specific section especially for talc using this method that was published in 2014.

Ms. TLAIB. Why is it essential to use the most sensitive methods? I mean, it's clear to me, so we can find it, right?

Mr. LONGO. So you can find it. And also I believe because it's hard to get grasp around the fact that if you have something that's at trace levels, you can still have hundreds of millions of asbestos fibers in there because they're so small and weigh so little.

Ms. TLAIB. And do you believe the heavy liquid density separation method, which we just talked about, is the most sensitive method available? And you're saying internationally that's what's been seen as the process.

Mr. LONGO. Yes, I do.

Ms. TLAIB. So just to get a little bit more deeper—and I can't believe—this is stuff that my son would love, my 14-year-old. This is out of my area. I just know if somebody is harmful, I just want to be able to speak up for them.

But how does the sensitivity of high liquid density separation method detect asbestos in samples that would otherwise test negative for asbestos?

Mr. LONGO. Well, if you have a detection limit of 10 million to 14 million, that would eliminate almost 95 percent of the samples that we found that were positive, if we had to have that detection limit.

The heavy liquid density separation method, we've been able to increase that sensitivity between 2,000 and 3,000 times. That's why we're now seeing what I believe is the reason why people have not been seeing it in the past.

Ms. TLAIB. Okay. Thank you so much, Chairman. I yield the rest of my time.

Mr. KRISHNAMOORTHY. Thank you so much, Congresswoman.

And thank you to all the witnesses for coming here today. Thank you to the audience members for being present for this very important hearing.

I'd like to thank our witnesses for their testimony.

Without objection, all members will have five legislative days within which to submit additional written questions for the witnesses to the chair which will be forwarded to the witnesses for responses. I ask our witnesses to please respond as promptly as you are able.

This hearing is adjourned.

[Whereupon, at 3:28 p.m., the subcommittee was adjourned.]

Exhibit 9

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 Work Practice Studies and the Testimony of Dr. William E. Longo, Richard L. Hatfield & Michael D. Mount, CIH,
 William B. Egeland, M.S., P.G., Mark W. Rigler, Ph.D.**

Cause No.		Case Name	Location	Law Firm	Expert
1)	92-11238-G	Darrell Wayne Caves v Keene Corp.	134 th Judicial District Dallas District Court	Baron & Budd	WEL
2)	45664-A	Wesley Roberts v Owens Corning Fiberglass Corp.	18 th JDC, Parish of Iberville State of Louisiana	Baron & Budd	RLH
3)	DV98-03696	James Blackburn v Dresser Industries	116 th District Court Dallas County, Texas	Baron & Budd	WEL RLH
4)	DV98-03696	James Blackburn v. Dresser Industries	Tyler, Texas	Baron & Budd	WEL
5)		Robert Alton Adcock v. Owens Corning Fiberglass	153 District Court Tarrant County, Texas	Silber Pearlman	
6)	95-1922	William Arthur Brown v Borg Warner	County Court at Law No. 2 El Paso County, Texas	Baron & Budd	WEL
7)	97-16440 04/13/99	Dennis C. Eisenreich and Victoria I. Eisenreich v. Durabla Manufacturing Company, et al.	Civil Division – Asbestos Allegheny y County, Pennsylvania Hon. Robert P. Horgos	Goldberg, Persky & White	RLH
8)	99-2681-3 04/10/01	Billy Ray Meadows v United States Gypsum	McLennan County Waco, Texas	Ness Motley et al	WEL
9)	00-01428	Clyde A. Black, Sr. v Garlock, National Service and A.P. Green	Glynn Superior Court Brunswick, Georgia	Lane & Gossett	
10)	590-228	Benjamin D. Jones v. CSX	Federal Court Brunswick, Georgia	Lane & Gossett	
11)	591-226	James B. Ostein v CXSW	Federal Court Brunswick, Georgia	Lane & Gossett	
12)	98-01249-1	Lee Bailey v U.S. Gypsum	162 nd Court Dallas, Texas	Baron & Budd	WEL
13)	59078 01/09/09	Bobby Jean Thorne, Individually and as Personal	196 th Judicial District Hunt County, Texas	Hendler Law Firm	

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Cause No.		Case Name	Location	Law Firm	Expert
		Representative of the heirs and Estate of James Bruce Thoren, Deceased, et al v. A C & S, Inc., et al.			
14)	99-268-3 04/02/01	Norman Hines and Frankie Hines v AC&S, Inc., et al.	254 th Judicial District Hunt County, Texas Hon. Richard A. Beacom, Jr.	Hendler Law Firm	
15)	CA-2000-3559 08/20/01	Alfredo Hernandez v GAF Corp. et al.	County Court El Paso Co., Texas	Baron & Budd	WEL
16)	A-920-961- SC(19)	Oscar Kelley Bell, et al. v Dresser Industries	128 th Judicial District Court Orange County, Texas Hon. Pat Clark	Reaud, Morgan & Quinn	WEL
17)	00000232 09/20/01	Betty Lou Cole et al v AC&S	Circuit Court Baltimore, MD	Law Offices of Peter Angelos	WEL
18)	00-1-3297- 10EEH	Edward T.W. Chang v Owens-Illinois, Inc. et al	Circuit Court of the First Circuit, State of Hawaii Hon. Eden Elizabeth Hifo	Galiher, DeRobertis, Nakamura, Ono & Takitani	WEL
19)	98-CP-232792 10/10/01	James W. Henderson Jr. v AC&S et al	Greenville County Court Greenville, SC	Wallace & Graham	
20)	1164-BH00 12/06/01	Betty Wilson, Individually and as Personal Representative of the Heirs and Estate of Leonard Wilson, Deceased v Able Supply Co, et al.	23 rd Judicial District Brazoria County, Texas	Waters & Kraus	
21)	120954/2000 01/10/02	New York City Asbestos Litigation "Jose Lopez"	Supreme Court of the State of New York	Weitz & Luxenberg	RLH
22)	98-17939 1/30/02	William Anderson v A-Best Products et al	Allegheny County, Pennsylvania	Goldberg, Persky & White	RLH
23)	B-163, 425 02/04/02	Joseph Jagneaux et al v Union Carbide Corp.	60 th Judicial District Jefferson Co. TX	Ness Motley et al	

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	Cause No.	Case Name	Location	Law Firm	Expert
24)	2001-031817 04/23/02	Karen & Jeffrey Peterson v Hill Brothers Chemicals	Alameda County Superior Court	Kazan McClain et al	
25)	41,862 06/06/02	Verda Sutton et vir v AC&S Inc et al	356 th Judicial District Hardin County, TX	Breen Coon & Assoc.	
26)	No. 01-C-9004 10/01/02	Asbestos Trial Group	In the Circuit Court of Kanawha County, WV	Goldberg Persky & White	RLH
27)	No. 95-3284 11/07/02	Christina Torrejon, Individually and as Personal Representative of the Estate of Joseph Torrejon v Mobil Oil Co., et al.	Civil District Court for the Parish of Orleans State of Louisiana	Martzell & Bickford	WEL
28)	No. 99-20000 11/12/02	Virginia: In the Circuit Court for the City of Newport News in Re: All Asbestos Cases	Circuit Court for the City of Newport News, VA Judge Robert W. Corran	Ness Motley et al	
29)	99-06508-M 01/13/03	Thurman Harmon; Glendell Don Maxey; Minnie June McGuire et al v Owens Corning et al	District Court Dallas County TX, 298 th Judicial Court	Baron & Budd	WEL
30)	24-X-02000669 03/19/03	Harry Hunter et al v AC&S Inc et al	Baltimore City Circuit Court Judge Rombro	Law Offices of Peter Angelos	
31)	No. 01-02964 03/20/03	George Stewart v A-Best Products et al	Allegheny County PA	Goldberg Persky & White	RLH
32)	84-429634-NP 03/28/03	Board of Education of the School District of the City of Detroit, et al v The Celotex Corporation, et al.	Third Judicial Circuit Court Wayne County, MI Hon. Robert J. Columbo, Jr.	Humphrey Farrington McClain & Edgar, P.C.	RLH
33)	24-X-02000672 05/21/03	Richard Harris et al v AC&S, Inc. et al	Circuit Court Baltimore City Baltimore MD Hon. Thomas E. Noel	Law Offices of Peter Angelos	WEL
34)	120146/01 105031/02	In Re: New York Asbestos Litigation	Supreme Court of the State of New York, County of NY,	Levy Phillips & Konigsberg, LLP	RLH

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	Cause No.	Case Name	Location	Law Firm	Expert
	103082/02 06/10/03	Tucker, Gomez & Perkins	Hon. Louis B. York		
35)	No. 01-C-753 06/19/03	Eddie Caffey et al v Foster Wheeler Energy Corp.	Cass County, TX Judge Burgess 5 th District	Nix, Patterson & Roach	
36)	No. 01-454-D	Louis Barletta and Mary Jane Barletta v A.W. Chesterton	Kleberg County, TX 105 th Judicial District	Hendler Law Firm	
37)	No. 17656-JG01	William Lonas, Individually and as the personal representative of the heirs to the estate of Charlene Lonas and John Lonas v AC&S, Inc.	Brazoria County, TX 239 th Judicial District	Brent Coon & Assoc	
38)	No. 01L201 10/30/03	Shirley Garzee, Individually and as Special Administrator for the Estate of Melvin Garzee, Deceased, Plaintiff v AC&S Inc et al, Defendants	Peoria County, IL 10 th Judicial Circuit Court	Walker & Wylder	
39)	No. 02-C-220 11/06/03	Schiller v Garlock	Cass County, TX Judge Burgess 5 th District	Nix, Patterson & Roach	
40)	No. 437948 11/19/03	Blandford v Garlock	Cuyahoga, OH Judge Harry A. Hanna	Baron & Budd	WEL
41)	No. 2002-17551 11/16/03	Bertucci v Northrup Grumman	Parish of Orleans Miriam G. Waltzer Judge Ret. Special Master	Martzell & Bickford	WEL
42)	No. 033-6161 01/15/04	Lois Lisac v Allied Signal et al	Judge Timothy P. O'Reilly Common Pleas of Allegheny Co., PA	Goldberg Persky & White	RLH
43)	No. 17-200000- 03 03/01/04	Paul Verret & Judith Verret v American Biltrite Ind. Et al	17 th Judicial District Tarrant Co., TX Judge Curry	Richardson Patrick Westbrook & Brickman	
44)	No. 03-3367	C. Ann Jones & the Rev.	Civil District Court for the Parish	Martzell & Bickford	

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	Cause No.	Case Name	Location	Law Firm	Expert
	05/13/04	George A. Jones v Meyer's Auto Parts, Inc.	of Orleans Judge Lloyd Medley, Jr.		WEL
45)	No. 20-011317 09/24/04	Karen Rose, Executrix of Estate of Robert Habovick v F.B. Wright Co.	Allegheny Co., PA Judge Robert J. Colville	Savinis D'Amico & Kane	RLH
46)	No. 37073-04 09/24/04	Michael Little, Executor of Estate of Zebulon A. Little v Garlock	Circuit Court for the City of Newport News, VA Judge Vincent Conway	Patten, Wornom, Hatten & Diamonstein	WEL
47)	No. CBC 03-427234 10/04/04	Ernst Kruger & Brigitte Kruger v AC&S, Inc. et al	San Francisco Superior Court, San Francisco CA Judge David Balatti	Harowitz & Tigerman	RLH
48)	No. BC 307058 10/05/04	Robert Treggett et al v Alfa Laval et al	Judge William Fahey Los Angeles CA	Waters & Kraus LLP	
49)	No. 117820 10/29/04	Donald Reynolds & Nancy Reynolds v Garlock Sealing Technologies & Niagara Insulation Inc	State of NY Supreme Court County of Niagara	Lipsitz & Ponterio	RLH
50)	No. 36688H-02 11/15/04	Pyatt v Garlock	Circuit Court for the City of Newport News, VA Judge Edward L. Hubbard	Patten Wornom Hatten & Diamonstein	WEL
51)	No. 220451 01/12/05	Lippincott v Moldex-Metric, Inc. et al	Judge Frederick H. Bysshe, Jr. Ventura CA	Levin Simes Kaiser & Gornick	RLH
52)	No. 01-614 02/24/05	Ladell Alexander et al v American Cyanamid, et al	District Court Harris County, Texas Hon. Bonnie Leggat	The Carlisle Group	
53)	No. CC-03-01977-C 03/01/05	Bostick et al v Georgia Pacific Corp.	Dallas County Court Judge Montgomery	Baron & Budd	WEL
54)	No. 495202 03/03/05	Leech v 3M Company et al	Court of Common Pleas Cuyahoga County	Baron & Budd	WEL

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Cause No.		Case Name	Location	Law Firm	Expert
			Judge Hanna		
55)	No. G.D. 104-9409 03/11/05	Dinger v Dravo Corporation	Court of Common Pleas Allegheny County, PA Judge Terrence O'Brien	Savinis D'Amico & Kane	RLH
56)	No. 02-CI-00310 04/13/05	Ava Nell Dexter, Individually & James M. Dexter Executor v Triangle Insulation & Sheetmetal Co. et al	Commonwealth of Kentucky Marshall Circuit Court	Sales Tillman Wallbaum Catlett & Satterley	WEL
57)	No. 04L-009806 No. 04L-009809 10/12/05	Spirydowicz v American Biltright Inc. et al	Circuit Court of Cook County, IL Judge Janura	Richardson Patrick Westbrook et al	RLH
58)	No. 119964/03 No. 117193/03	Matos et al v American Standard, Inc. et al	State of New York County of New York	Levy Phillips & Konigsberg, LLP	RLH
59)	No. 438617 10/11/05	Joan & David Salyer v Kaiser Gypsum	Superior Court of San Francisco Judge Donald Mitchell	Levin Simes Kaiser & Gornick	WEL
60)	No. 04-16237CA(42) 12/07/05	Joseph Mallia v Bennett Auto Supply Inc., et al	Circuit Court of the Eleventh Judicial Circuit in and for Miami Dade County, Florida Judge Richard Yale Feder	David Lipman, P.A.	WEL
61)	No. 04-L-676 02/22/06	Anita Douglas O'Connell et al v A.W. Chesterton, Inc. et al	3 rd Judicial Court Madison County, IL	Baron & Budd	WEL
62)	No. 39028T-01	Wanda T. Jones, Administratrix of the Estate of Garland F Jones, Jr. Deceased v John Crane, Inc.	Circuit Court for the City of Newport News, VA	Patten, Wornom, Hatten & Diamonstein	WEL
63)	No. 04C101843	Duel Lee v Garlock	Jefferson County Circuit Court Louisville, KY	Sales Tillman Wallbaum Catlett & Satterley	WEL
64)	No. 2002-576 07/21/06	Lewis Wright, et al v Honeywell International, Inc. et al	Circuit Court of Holmes Co. Lexington, MS	Law Offices of David Lipman	WEL

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Cause No.		Case Name	Location	Law Firm	Expert
65)	No. 2005EV000009D 09/19/06	Patsy Jean Bodkin v Georgia Pacific Corporation, et al.	State Court of Fulton County State of Georgia Judge Henry M. Newkirk	Patten Wornom Hatten & Diamonstein	WEL
66)	No. 016-7841 01/22/07	Kinsella v Argo Parking Co., et al	Court of Common Pleas Allegheny County, PA Judge Ronald W. Folino	Savinis D'Amico & Kane	RLH
67)	No. 05-14194 01/29/07	Eicher v Sears Roebuck & Co., et al	Court of Common Pleas Allegheny County, PA Judge Eugene Scanlon	Savinis D'Amico & Kane	RLH
68)	No. 06-CI-00056 02/2007	Mary Katherine Irwin v General Motors Corp.	Metcalfe Circuit Court Division I Edmonton, KY	Sales Tillman Wallbaum Catlett & Satterley	WEL

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PageID: 248546



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69)	No. BC357289. 08/2006	Conrad Beauchamp et al v Allis- Chalmers et al	Los Angeles Superior Court Central District Dept 71 Hon. Soussan G. Bruguera	Baron & Budd	WEL
70)	No. 003451 12/2006	Leslie Victor Duke and Dorian Duke v A.W. Chesterton Co., et al.	Philadelphia County Court of Common Pleas Civil Trial Division	Baron & Budd	WEL
71)	No. 00301TF 03/2007	Sandra K. Oney, Executor of the Estate of Sharon Vaughn, deceased v John Crane Inc.	Newport News Circuit Court Newport News, VA Judge Timothy Fisher	Patten Wornom Hatten & Diamonstein	WEL
72)	No. 2003- 58354 05/2007	Michael Donald Edwards v Quigley Company, Inc.	11 th Judicial Court Harris County, Texas	Baron & Budd	WEL
73)	No. 2004- 19730 10/2007	Emma Josephine Maloney Martin, Individually and as Personal Representative of the Heirs and Estate of James Hubert Martin v Quigley Company, Inc. et al	11 th Judicial Court Harris County, TX	Baron & Budd	WEL
74)	No. 2007-CA- 001627 08/2007	R.T. Vanderbilt Company, Inc v Hon. Rebecca Overstreet and Johnny Franklin, Individually and as Administrator of the Estate of Flora Franklin	Anderson Circuit Court Commonwealth of Kentucky Court of Appeals Judge Rebecca Overstreet	Sales Tillman Wallbaum Catlett & Satterley	WEL
75)	06CV1393 11/2007	Oliver D. Smith and Peggy Ann Bowen Smith v Crane Co. et al.	Galveston County, Texas 122 nd Judicial District Court Judge John Ellisor	Baron & Budd	WEL
76)	03-05383-L 11/2007	Bobby Dale James, Individually and as Personal Representative of the Heirs and Estate of Constance Mae James, Deceased, and as anticipated	Dallas County, TX 193 rd Judicial District Court Honorable Knize	Baron & Budd	WEL

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		Personal Representative of the Heirs and Estate of Joe Thomas James, Deceased, Plaintiffs v The Sherwin William Company et al			
77)	06-CI-01207 10/2007	Teresa Ann Schwarber, Executrix of the Estate of Carl John Schwarber, Plaintiff v General Motors Corp et al	Commonwealth of Kentucky Campbell Circuit Court Second Division Judge: Hon. Fred A Stine, V	Sales Tillman Wallbaum Catlett & Satterley	WEL
78)	2005-17511 02/08/08	Rosemary Smith, Brady Smith and Donna Hubbard, Individually and as personal Representative of the Heirs and Estate of Dorman Smith v Elementis Chemicals, Inc. et al.	District Court Harris County, Texas, 11 th Judicial District Honorable Mark Davidson	Waters & Kraus	WEL
79)	BER-L-9592-02 02/2008	Susan M. Buttitta, Individually and as Executrix of the Estate of Mark Buttitta v Allied Signal, Inc et al	Bergen County Law Division, Superior Court of New Jersey	Levy Phillips & Konigsberg, LLP	WEL
80)	E-159, 183-Q 03/2008	Caryl Richardson, Individually and as Independent Executrix of the Estate of Willis N. Whisnant, Jr., Deceased and as Representative of the Wrongful Death Beneficiaries, et al v E.I. du Pont de Nemours and Company	172 nd Judicial District Court of Jefferson County, Texas	Reaud, Morgan & Quinn, LLP	WEL
81)	No. 05CV010416 04/14/08	Colleen Lemberger, et al v Anchor Packing Co., et al	State of Wisconsin Milwaukee Co. Circuit Court Hon. Richard J. Sankovitz	Cascino Vaughan Law Offices, Ltd.	WEL
82)	No. CV567637 04/09/08	James Michael Angelo, deceased, v 3M Company, et al	State of Ohio, County of Cuyahoga, Court of Common Pleas Civil Division	Baron & Budd	WEL
83)	No. 07-2-539-7 03/25/08	Judy Clauson v Atlas Foundry Limited Partnership d/b/a Atlas	Grays Harbor County Superior Court	Bergman & Frockt	WEL

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		Casting & Technology, et al	Judge: Hon. David Edwards		
84)	No. 01359 DP 08/25/08	Koonce v John Crane	Circuit Court for the City of Newport News, State of VA Judge Pugh	Patten Wornom Hatten & Diamondstein, LC	WEL
85)	No. 38504 AF 10/27/08	King v John Crane	Circuit Court of the City of Newport News, State of VA Judge Foster	Patten Wornom Hatten & Diamondstein, LC	WEL
86)	No. 01180 VC 11/14/08	Morton v Exxon	Circuit Court for the City of Newport News, State of VA Judge Fisher	Patten Wornom Hatten & Diamondstein, LC	WEL
87)	No. 3:07-CV- 00065-H 02/05/09	Olwen Moeller v Garlock Sealing Technologies, LLC	U.S. District Court Western District of Kentucky Judge: Hon. John Heyburn	Sales Tillman Wallbaum Catlett & Satterley	WEL
88)	No. 2008-0445 03/03/09	Spencer v United Gilsonite Laboratories, et al	Supreme Court of the State of New York, County of Cayuga	Belluck & Fox	RLH
89)	No. 01-CI- 1344	Debbie Ellen Rehm, Individually and as Executrix of the Estate of James David Rehm, et al v Navistar International Corporation et al.	Jefferson Circuit Court, Division Eight (8), KY Judge: Hon. A.C. McKay Chauvin	Sales Tillman Wallbaum Catlett & Satterley	WEL
90)	No. 2009-06- 3742-A	Oscar Torres and Spouse, Dora Torres v Union Carbide Corporation, et al.	107 th JDC of Cameron Co., Texas	Williams Kherkher Hart Boundas, LLP	WEL
91)	No. 09-08930- 1	Vernon Walker, Sr. & Patsy Walker v RPM International, Inc et al	162 nd District Court of Dallas County, Texas	Baron & Budd	WEL
92)	No. 559,507	Betty Lou Bello v Anco Insulation, Inc., et al.	19 th Judicial District Court for the Parish of Eat Baton Rouge, State of Louisiana Judge Robert J. Burns	Baron & Budd	RLH
93)	No.	Kenneth Ochs, et al., v AC&S,	Circuit Court for Baltimore City	Law Offices of Peter G.	

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Work Practice Studies and the Testimony of Dr. William E. Longo, Richard L. Hatfield & Michael D. Mount, CIH,
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	24X09000165	Inc., et al.	Hon. Sylvester B. Cox	Angelos, PC	WEL
94)	No. 2901-10	Craig D. Bishop and Donna M. Bishop v Advance Auto Parts, LLC, et al.	Albany County Supreme Court Albany, NY Hon. Christian F. Hummel	Lipsitz & Ponterio, LLC	RLH
95)	No. 2011-636	Thomas Kenney v. A.W. Chesterton, et al.	Civil District Ct. for Parish of Orleans, LA	DeLuca & Nemeroff	WEL
96)	No. 07-2-04511-9	David Taylor v. Saberhagen Holdings, et al.	Superior Ct. of Washington for Pierce County	Bergman, Draper & Frockt	WEL
97)	No.	Lloyd Benton/John Garcia v.	New York Supreme Court	Levy & Phillips	WEL
98)	No. 10-CI-00504	Robert T. Bush v. Eaton Corp., et al.	Warren Circuit Ct. of Kentucky	Sales, Tillman	WEL
99)	No. BC453352	Williamson, et al. v. Calaveras Asbestos Ltd., et al.	Los Angeles County, CA	Waters & Kraus	JT
100	No. 10-08454-D	Martha Ann Gensler v. Ashland, Inc., et al.	Dallas County, TX	Baron & Budd	WEL
101	No. BC 457257	Carolyn Esters v. Acument Global Technologies, et al.	Los Angeles County Sup. Ct., CA	Lanier Law Firm	RLH
102	2008 EV003933Y	McReynolds v. Southern Waste Services, Inc., et al.	Fulton County State Court, GA	Steel & Moss	WEL
103	CL 04-1127	Stephen W. Wilbur v. Garlock Sealing Technologies, LLC	Circuit Court for the City of Portsmouth, Virginia	Glasser & Glasser	
104	1:03-CV-17000	In Re: Welding Fume Products Liability Litigation	U.S. District Court, Northern District of Ohio, Eastern Div.		WEL
105	38356P-03 38116P-03	Raymond N. Crockett v. Garlock Sealing Technologies, LLC, et al./ Lucas E. Hicks, Jr., v. Garlock Sealing Technologies, LLC, et al.	Circuit Court for the City of Newport News, Virginia	Patten, Wornom, Hatten & Diamonstein, LC	WEL
106	2005-14079	William Raines, Sr. v. Ametek, Inc., et al.	Harris County District Court, Harris County, Texas	Heard Robins Cloud & Lubel	WEL
107	2006-31321	Glenn Riley v. Aqua-Chem, Inc., et al.	Harris County District Court, Harris County, Texas	Kaeske Law Firm	

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108	04-C1-00274	Johnny Franklin v. General Motors Corp., et al.	Anderson Circuit Court, Kentucky	Sales, Tillman, Wallbaum Catlett & Satterly	WEL
109	10-2-11903-1	Dawn Dawes v. Certainteed Corp.	Superior Court of Washington for Pierce County	Bergman Draper & Ladenberg	WEL
110	11-4899	Juanita Page v. The McCarty Corp., et al.	Parish of Orleans, State of Louisiana	Lanier Law Firm	WEL
111	2009-46247	Rocky W. Bludworth v. Anderson Brooksbank Valves, USA, et al.	District Court of Harris County, Texas	Baron & Budd	WEL
112	2010-44712-ASB	Magdalena Abutahoun v. Asbestos Companies, et al.	District Court of Harris County, Texas	Hawkins Parnell & Thackston, LLP	WEL
113	CGC-04-436967	Ernest A. Lantz v. Asbestos Corporation, et al.	San Francisco County, California	Clapper & Patti	RLH
114	2011-12718	Frederick R. Schulte v. CBS Corp., et al.	Civil District Court for the Parish of Orleans, Louisiana	Nemeroff Law Firm	WEL
116	11-2-07966-5	Lorena Jo Potts v. Ingersoll-Rand Co., et al.	Superior Court of Washington for Pierce County	Bergman Draper Ladenburg	WEL
117	2003-00872	Louis Cureau v. Flintkote, et al.	Civil District Court for the Parish of Orleans, Louisiana	Murray Law Firm	RLH
118	12-2-01923-1	Thomas Montaney v. Certainteed Corporation, et al.	Superior Court of Washington for King County	Bergman Draper & Ladenburg	WEL
119	RG 12613671	Patrick Scott v. Allied Packing	Alameda County, CA	Kazan McClain Lyons	WEL
120	BC 475835	Dimitris Couscouris v. Hatch Grinding Wheels, Inc., et al.	Los Angeles County, CA	Lanier Law Firm	WEL
121	0337-Aug.2011	Thomas & Jean Amato v. Bell & Gossett, et al.	Philadelphia County, PA	Nemeroff Law Firm	WEL
122	2682-Sept. 2010	Charlotte Vinciguerra v. Bayer Cropscience, Inc., et al	Philadelphia County, PA	Nemeroff Law firm	WEL
123	00002-Jan. 2010	William H. Seaman, Jr. v. Owens-Illinois, Inc., et al.	Philadelphia County, PA	Satterley & Kelley	WEL
124	RG 12629580	Rose-Marie Grigg v. Allied Packing & Supply, Inc., et al	Alameda County, CA	Kazan McClain Lyons & Greenwood	WEL

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 Work Practice Studies and the Testimony of Dr. William E. Longo, Richard L. Hatfield & Michael D. Mount, CIH,
 William B. Egeland, M.S., P.G., Mark W. Rigler, Ph.D.**

125	BC 473955	David E. Stanley/Lori Erhart v. CSK Auto, Inc., et al.	Los Angeles, CA	Lanier Law Firm	WEL
126	BC 342363	Saller, Donna v. Bondex Int'l, et al.	Los Angeles, CA	Waters & Kraus	WEL
127	2:13-cv-01747	Joanne Lipson (James Turner) v. Fraser's Boiler Service, Inc., et al.	U.S. District Court-Western District of Washington	Bergman Draper & Ladenburg	WEL
128	100-BK-31607	In Re: Garlock Sealing Technologies	U.S. Bankruptcy Court, Western District of N.C.	Motley Rice	WEL
129	RG 13687336	Kent Campbell v. Allied Packing et al.	Alameda County Superior Court, CA	Kazan McClain Satterley & Greenwood	WEL
130	CGC13276217	Harold Koepke v. Ford Motor Co.	San Francisco Co. Superior Ct.	Kazan McClain Satterley & Greenwood	WEL
131	13-2-08978-5	Richard Stefanson v. The Boeling Co.	Superior Ct. King County, WA	Bergman Draper Ladenburg	WEL
132	C20133499	Tank Hale v. American Standard	Pima County, AZ	Nemeroff Law Firm	WEL
133	3:14-cv-01096-BJD-JBT	Janet Voelker	Erie County, NY	Simon Greenstone Panatier Bartlett	MDM
134	1422-CC00819	Ava Campbell v. Ford Motor Co.,	St. Louis, MO	Bailey Peavey Bailey	MDM
135	C14-5588 RBL	Gregory Cannard v. CBS Corp.,	U.S. Dist. Court, Western Dist. Of Washington at Tacoma	Bergman Draper Ladenburg & Hart	WEL
136	13-3009	Wilford Knighton v. Freeport Sulphur Co., et al.	Civil District Ct. for Orleans Parish, State of Louisiana	Nemeroff Law Firm	WEL
137	BC 497405	Geraldine Fraser v. Boething Treeland Nursery, et al.	Los Angeles, CA	Hunton & Williams	WEL
138	RG13 701633	Richard Ortwein v. Certainteed Corp., et al.	Alameda County, CA	Kazan McClain Satterley Greenwood	WEL
139	15-2-10986-3	Susan Page v. Asbestos Corp., et al.	King County, WA	Bergman Draper Ladenburg Hart	WEL
140	RG15797638	Edward Espinosa v. CertainTeed	Alameda County, CA	Kazan McClain Satterley	WEL

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William B. Egeland, M.S., P.G., Mark W. Rigler, Ph.D.**

		Corp., et. Al.		Greenwood	
141	14-2-21662-9 SEA	Barbara Brandes v. Brand Insulation & Kaiser Gypsum Co., et al.	Court of Appeals of the State of Washington, Seattle	Bergman Draper Ladenburg	WEL
142	190109/2015	Jeanne Evans v. 3M Co., et al.	Supreme Ct. of the State of New York, New York County	Simon Greenstone Panatier & Bartlett	WEL
143	BC 538462	Mettias, Febi v. Arby's, et al.	Superior Court for Los Angeles County, GA	Dean Omar Branham	WEL
144	24X15000318	Raymond Greenhill (Estate of Concetta Schatz, et al.	Circuit Court for Baltimore City, MD	Peter Angelos Law Office	WEL
145	2015-9041	Garcia, Robert v. Exxon Mobile, et al.	Civil Dist. Court for Parish of Orleans, Louisiana	Baron Budd	WEL
146	RG 16819332	Burch, Michael v. CertainTeed Corp., et al.	Superior Court of Alameda County, GA	Kazan McClain Satterley Greenwood	WEL
147	RG 15797638	Espinosa, Edward v. CertainTeed Corp., et al.	Superior Court Alameda County, CA	Kazan McClain Satterley Greenwood	WEL
148	RG 15796166	Booker, Richard v. BASF Catalysts, et al.	Superior Court Alameda County, CA	Kazan McClain Satterley Greenwood	WEL
149	BC 646315	Herford, Tina v. AT & T, et al.	Superior Court of Los Angeles, CA	Simon Greenstone Panatier & Bartlett	WEL
150	10CA- CVO1079	Gunter, Thomas v. Terri Milliam, et al.,	Circuit Court of Cass County, Harrisonville, MO	Humphrey Farrington	WEL
151	812822/2016	Bernacki, Ralph v. Asbestos Corp., et al.	Supreme Court of State of NY, Erie County	Lipsitz & Ponterio	WBE
152	16-2-15978-8 SEA	Esvelt, Jack v. Certainteed Corp., et al.	Superior Court of Washington, King County	Simmons HanlyConroy	MWR
153	190349/15	Rosa, Anthony v. Asbeka Industries, et al.	Supreme Court of New York, NY	Levy Konigsberg	WEL
154	16-2-21021-0 SEA	Brooke, James v. Lone Star Industries, et al.	Superior Court of Washington, King County	Bergman Draper Oslund	WEL
155	CL1603266T1	Mullinax, Herbert	Newport News, VA	Patten Worman Hatten	WEL

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William B. Egeland, M.S., P.G., Mark W. Rigler, Ph.D.**

				Diamonstein	
156	Mid-L-7385-16AS	Lanzo, Stephen v. Cypress Amaz, et al.,	Superior Court of Middlesex County, NJ	Levy Konigsberg	WEL
157	BC 53712	Ortiz, Nemecio/Gomez, Hortencia	Santa Monica, CA	Dean Omar Branham	WEL
158	1522-CC10417	Ingham, Gail	St. Louis, MO	Lanier Law Firm	WEL
159	4:17cv9	Goodrich, Harry v. Air & Liquid Systems, et al.	U.S. Dist. Ct., Eastern Dist of Virginia, Newport News Div.	Patten Worom Hatten Diamonstein	WEL
160	MID-L-1748-17AS	Henry, Rosalind v. Brenntag North America, et al.	Superior Court of New Jersey, Middlesex County	Motley Rice	WEL
161	3854/2016	Shields, Paul v. American Biltrite, Inc., et al.	Supreme Court of NY, Seventh Judicial District, Monroe County	Levy Konigsberg	WBE
162	24X14000295	Ament, Richard v. AC&S, Inc., et al.	Circuit Court for Baltimore City, MD	Law Offices of Peter Angelos	WEL
163	24x160000054	Boston, Henry v. AC&S, Inc., et al.	Circuit Court for Baltimore City, MD	Law Offices of Peter Angelos	WEL
164	DR180132	Allen, Carla v. Brenntag North America, Inc., et al.	Superior Court of CA, County of Humboldt	Simon Greenstone Panatier	WEL
165	18-2-15767-1 SEA	Berkshire, Richard v. SYD Carpenter Marine Contractors, et al.	King County, WA	Bergman Draper Oslund	WEL
166	RG17880698	Barr, Barbara v. A-1 Clutch Co.	Alameda County, CA	Maune Raichle Hartley French Mudd	WEL
167	190328/2017	Olson, Donna v. Brenntag North America, Inc., et al.	Supreme Court of NY, New York County	Levy Konigsberg	WEL
168	MID-L-02912-17	Rimondi, Ricardo v. BASF Catalysts LLC, et al.	Middlesex County, NJ	Lanier Law Firm	WEL
169	CJ-2017-3487	Pipes, Sharon v. Johnson & Johnson, et al.	District Court for Oklahoma County, Oklahoma	Simon Greenstone Panatier	WEL
170	16 AO-CC00095	Comer, Elizabeth v. CBS Corporation, et al.	Jasper County Circuit Court, Joplin, MO	Baron Budd	WEL

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171	JCCP 4674/BC67764	Blinkinsop, Robert . Albertson's Companies, et al.	Superior Court for State of California, Los Angeles	Weitz & Luxenberg	WEL
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Exhibit 10

1 SUPERIOR COURT OF THE STATE OF CALIFORNIA

2 FOR THE COUNTY OF LOS ANGELES

3 DEPARTMENT NE R

HON. C. EDWARD SIMPSON, JUDGE

4
5 CONSOLIDATED PROCEEDINGS
SPECIAL TITLE (RULE 3.550)

6 LAOSD ASBESTOS CASES

) JCCP Case No. 4674

7 TINA HERFORD AND DOUGLAS HERFORD,

) Case No. BC646315

8 Plaintiffs,

9 vs.

10 AT&T CORP., a subsidiary of AT&T
11 INC. and its subsidiary PACIFIC
12 BELL TELEPHONE COMPANY, et al.,

13 Defendants.

14
15
16 REPORTER'S TRANSCRIPT OF PROCEEDINGS

17 SEPTEMBER 27, 2017

18
19 APPEARANCES:

20 For Plaintiffs:

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LEAH C. KAGAN, ESQ.
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DALLAS, TEXAS 75204

26 (Appearances, Continued Next Page)

27 REPORTED BY:

28 DEBORAH MORIN, CSR NO. 11558
OFFICIAL REPORTER PRO TEMPORE

1 APPEARANCES OF COUNSEL: (Continued)

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9 -AND-

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16 ORRICK, HERRINGTON & SUTCLIFFE, LLP
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21 For IMERYS TALC AMERICA AND CYPRUS AMAX:

22 ALSTON & BIRD
23 BY: TODD B. BENOFF, ESQ.
24 PETER E. MASAITIS
25 333 SOUTH HOPE STREET, 16TH FLOOR
26 LOS ANGELES, CALIFORNIA 90071
27 (213) 576-1000
28

1 THE COURT: First, I don't think a 402 hearing
2 is necessary. There has been a tremendous number of
3 documents attached to the opposition to the motion.
4 There's a number of documents that have been attached to
5 the motion itself. As I indicated earlier, I believe
6 that what is admissible is what Dr. Longo tested, what
7 the results of his tests were.

8 I think he can opine as to whether or not
9 those results are consistent with his review of
10 Johnson & Johnson documents, but what he cannot do and
11 what I don't think is admissible is his extrapolation of
12 his test results to the party -- to the talc that was
13 actually used by the plaintiff over a long period of
14 time. It's circumstantial evidence. The jury will have
15 to decide.

16 His video, I think, doesn't seem to be any
17 controversy over that. It's certainly not admissible.
18 But I think his methodology finds support in the
19 science. It seems to me that the science may not be in
20 agreement as to the appropriate methodologies. It's
21 almost like a medical malpractice case in which a doctor
22 cannot be criticized by using one method of treatment if
23 another method of treatment would have produced a better
24 or a different result if the two methods are appropriate
25 methods.

26 And I think here we have a controversy between
27 the experts as to whether or not the methods are
28 acceptable methods, and the lawyers and the jury are

1 going to have to just sort that out amongst themselves.

2 Let's see if we can move along to No. 4 is to
3 exclude certain opinions of Dr. Gordon.

4 My understanding is that Dr. Gordon examined a
5 lymph node from the plaintiff. He wants to give us his
6 opinion as to what he found in that examination. He
7 wants to tell us that the disease that he found in the
8 lymph node can be found in the exposure to cosmetic
9 talcum powder. He apparently used some type of a
10 control group in his studies to arrive at opinions.

11 We also have the problem of the samples that
12 he tested. My preliminary thoughts are that what is not
13 admissible -- I'm not so sure it's his opinion that the
14 tissues that he examined from the lymph node correlate
15 with the plaintiff's use of cosmetic talc. I don't know
16 if there's an underlying science that would support that
17 opinion. He has an opinion that cleavage fragments can
18 cause asbestos-related disease.

19 So in a nutshell, Mr. Benoff, what's the focal
20 point of the motion?

21 MR. MASAITIS: Good morning, Your Honor.
22 Peter Masaitis for Imerys and Cyprus.

23 So I have three distinct issues I'd like to
24 direct the Court's attention to on the Dr. Gordon
25 motion. And I think it would make sense to start with
26 the simplest and the cleanest first.

27 So Dr. Gordon bases his causation opinion, his
28 opinion that Mrs. Herford's mesothelioma was caused by

1 SUPERIOR COURT OF THE STATE OF CALIFORNIA

2 FOR THE COUNTY OF LOS ANGELES

3 DEPARTMENT NE R

HON. G. EDWARD SIMPSON, JUDGE

4
5 CONSOLIDATED PROCEEDINGS
SPECIAL TITLE (RULE 3.550)

6 LAOSD ASBESTOS CASES

) JCCP Case No. 4674

7 TINA HERFORD AND DOUGLAS HERFORD,

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9 vs.

10 AT&T CORP., a subsidiary of AT&T
11 INC. and its subsidiary PACIFIC
12 BELL TELEPHONE COMPANY, et al.,

13 Defendants.

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17 I, DEBORAH MORIN, CSR NO. 11558, OFFICIAL REPORTER
18 PRO TEMPORE OF THE SUPERIOR COURT OF THE STATE OF CALIFORNIA,
19 FOR THE COUNTY OF LOS ANGELES, DO HEREBY CERTIFY THAT THE
20 FOREGOING PAGES, 1 THROUGH 157, COMPRISE A FULL, TRUE AND
21 CORRECT TRANSCRIPT OF THE PROCEEDINGS AND TESTIMONY TAKEN IN
22 THE ABOVE-ENTITLED CAUSE ON SEPTEMBER 27, 2017.

23 DATED THIS 27TH DAY OF SEPTEMBER, 2017.

24
25
26 , CSR NO. 11558
27 DEBORAH MORIN, OFFICIAL REPORTER
28

Exhibit 11

SUPERIOR COURT OF NEW JERSEY
LAW DIVISION, CIVIL PART
MIDDLESEX COUNTY
DOCKET NO. L-7385-16AS
A.D.# _____

STEPHEN LANZO, III, AND
KENDRA LANZO,

Plaintiff,

vs.

CYPRUS AMEX MINERALS CO.,
INC., ET AL.,

Defendant.

TRANSCRIPT
OF
DECISION ON MOTION

Place: Middlesex County Courthouse
56 Paterson Street
New Brunswick, New Jersey 08903

Date: December 22, 2017

BEFORE:

HONORABLE ANA C. VISCOMI, J.S.C.

TRANSCRIPT ORDERED BY:

LAUREN DI STEFANO, PARALEGAL (Levy Konigsberg)

1 APPEARANCES:

2 MOSHE MAIMON, ESQ.

(Levy Konigsberg)

3 Attorney for the Plaintiff

4 JOSEPH SATTERLEY, ESQ.

5 (Kazan, McClain, Satterley & Greenwood)

6 Attorney for the Plaintiff

7 JACK N. FROST, ESQ.

8 STEPHEN R. LONG, ESQ.

(Drinker Biddle & Reath)

9 Attorneys for the Defendant, Johnson & Johnson

10 MIKE BROCK, ESQ.

(Kirkland & Ellis)

11 Attorney for the Defendant, Johnson & Johnson

12 LINDA DOBBINS, ESQ.

13 (Rawle & Henderson)

Attorney for the Defendant, Cyprus Amax, Imerys Talc

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Transcriber, Sherry M. Bachmann

22

G&L TRANSCRIPTION OF NJ

40 Evans Place

Pompton Plains, New Jersey 07444

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Sound Recorded

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Recording Operator,

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I N D E XPROCEEDINGPAGE

Judge's Decision on Motion

4

1 THE COURT: We're going to go on the record
2 now. I'll introduce the case, and then you'll enter
3 your appearances, again. Good afternoon. We're here
4 with regard to the matter of STEPHEN AND KENDRA LANZO
5 V. CYPRUS AMAX MINERALS COMPANY, ET AL., docket number
6 7385-16. Could I have appearances, please, on behalf
7 of the plaintiffs.

8 MR. MAIMON: Good afternoon, Your Honor.
9 Moshe Maimon and Joseph Satterley for the Lanzas.

10 THE COURT: On behalf of the defendants,
11 Cyprus Amax Minerals and Imerys, respectively.

12 MS. DOBBINS: Linda Dobbins from Rawle &
13 Henderson.

14 THE COURT: And on behalf --

15 MR. BROCK: Mike Brock from Kirkland &
16 Ellis --

17 THE COURT: Thank you.

18 MR. BROCK: -- for J&J.

19 THE COURT: Thank you. And on behalf of --
20 go ahead.

21 MR. FROST: I was going to say, also on
22 behalf of Johnson & Johnson, Your Honor, are Jack Frost
23 and Steve Long from Drinker Biddle & Reath.

24 THE COURT: Thank you. Is that now everyone?
25 Yes.

1 MR. FROST: Yes. I believe that's the
2 quorum, Your Honor.

3 THE COURT: All right. Great. Thank you.
4 So this is a telephonic, in part, prehearing conference
5 but, also, for the Court to issue its ruling with
6 regard to the defendants, Johnson & Johnson entities
7 and Cyprus and Amax Imerys' motion to preclude all
8 testimony and evidence regarding the purported testing
9 of talc by plaintiff's experts based on lack of
10 authenticity.

11 As you may recall, the Court heard testimony
12 from Dr. Longo, plaintiff's expert, with regard to
13 these matters and the motion was well argued by Counsel
14 and I want to thank you for that.

15 I've taken time to review this Court's prior
16 ruling in FISHBEIN and SCHOENIGER (phonetic), reviewed,
17 again, the testimony of Dr. Longo before this Court, as
18 well as reviewing, again, his report and his
19 certification in support of the opposition to the
20 preclusion of the testing that he conducted.

21 So by way of background, as you may recall,
22 as far as this Court is concerned, the issue started
23 with FISHBEIN. In that case, there was a series of
24 samples as they related to different defendants, than
25 the defendants herein that were obtained by various law

1 firms and one plaintiff to a non-New Jersey matter.
2 The bulk of the samples were attained by way of EA.

3 The Court heard testimony in relation to the
4 samples from Dr. -- essentially, from Mr. Fitzgerald
5 and, also, Dr. Weber and the Court had the benefit,
6 also, of testimony presented in the context of a
7 deposition from Dr. Longo as well.

8 And by way of background from that decision,
9 Dr. Longo had opined that tampering with products would
10 be a virtual impossibility. Dr. Weber testified it
11 would be impossible to imagine how the sample -- the
12 results that are obtained by Mr. Fitzgerald would have
13 been consistent. So he testified it would be
14 impossible to imagine how these would have been
15 consistent with the results that Mr. Fitzgerald
16 produced, in other words, if tampering had occurred and
17 the defendants urged the Court to reject affidavits
18 that were supplied where there was no benefit of
19 testimony before the Court.

20 The Court had concern about the samples
21 because not so much -- not indeed as it related to what
22 happened with them after the attorneys obtained the
23 samples from the various means, but the providence of
24 the samples where they had been for potential decades.
25 The Court also noted in Page 8 of its decision with

1 regard to the samples, Mr. Maimon submitted a
2 certification as to chain of custody with regard to
3 three product samples certifying them to be authentic
4 and not having them tampered or adulterated and, with
5 all due respect to Mr. Maimon, I mean, certainly, one
6 could opine that after he obtained the samples while
7 they were in his control but certainly not beforehand
8 or --

9 So the Court did not permit any of those
10 samples short of vintage samples, which were -- which
11 were with regard to the store samples. The Court did
12 not permit any of those samples in. While the
13 plaintiff's expert, Dr. Weber, testified that Mr.
14 Fitzgerald could not have deliberately tampered with
15 the talc to achieve consistent results he reported, the
16 Court was nonetheless concerned about the providence of
17 that.

18 What was -- in utilizing the standard that
19 the Court must consider in these cases, under Rule 901,
20 the Court ruled as follows. Rule 901 places the burden
21 of chain of custody on the parties seeking to introduce
22 the evidence. Foundational requirement is such that it
23 generally should include a showing of uninterrupted
24 chain of possession. And for further commentary, see
25 Rule 9-- New Jersey Rule of Evidence 901, which also

1 cites, STATE V. MORTON at 155 N.J. 383 (1999) Supreme
2 Court case at Page 446.

3 Evidence should generally be admitted if the
4 trial Court "finds a reasonable probability that the
5 evidence has not been changed in important respects or
6 it is in substantially the same condition as when the
7 crime was committed. And see the commentary to Rule
8 901, citing STATE V. BROWN at 99 N.J. Super. 22 at Page
9 28, Appellate Division 1958.

10 A defect in the chain of custody goes to
11 weight and admissibility of evidence, citing MORTON at
12 Page 446. The rule annunciated in BROWN, which was a
13 criminal case, has been held to apply in the context of
14 civil cases, for example, MIDDLESEX HEALTH DEPARTMENT
15 V. IMPORTICO, at 315 N.J. Super. 397, Law Division case
16 from 1998.

17 In that case, the Court found that although a
18 break in chain of custody had occurred, based upon the
19 testimony presented, the Court found that the evidence
20 had not been materially altered and remained in
21 substantially the same condition as when the inspectors
22 first took it from waste loads. The cases regarding
23 chain of custody and authentication, primarily relate
24 photographs, machines, et cetera, and are instructive,
25 particularly because of the passage of time.

1 So, here, in -- after the Court decided
2 FISHBEIN, the Court had occasion to review its decision
3 in the context of SCHOENIGER. SCHOENIGER, as you may
4 recall, involved Colgate-Palmolive and Cashmere Bouquet
5 samples and, in that case, the Court determined to
6 allow certain samples in and those were the samples in
7 which the plaintiff's expert, who had been retained in
8 that case, had to break open a seal in order to access
9 the talcum powder, the Court finding that there was
10 under Rule 901, an indicia of reliability, an indicia
11 of that the contents contained therein are what they
12 purport to be.

13 And so, now, we look at the development of
14 the presentation of the matters of the samples before
15 the Court where we began FISHBEIN, then SCHOENIGER and,
16 now, for the very first time, as to Johnson & Johnson
17 and, also, Shower to Shower.

18 So as to the Johnson & Johnson products, the
19 Court heard testimony from Dr. Longo. The Court read
20 the pleadings and heard oral argument of Counsel and,
21 also, the Court viewed the YouTube video that came in
22 as part of their reply in which a person shows how one
23 can refill a small container, the smaller bottles of
24 the J&J, I guess, what are considered the travel size
25 by taking product -- other product, presumably, a more

1 -- a less expensive product, fill a plastic bag and
2 then using what is, I guess, considered a vacuum type
3 procedure, fill the travel size bottle part way.

4 What the Court found compelling was the
5 testimony of Dr. Longo insofar as he found that by
6 doing the testing, the consistency of the product
7 throughout and some of the tests that he conducted
8 revealed the presence of asbestos. Some did not and so
9 based upon his argument as to the consistency, which
10 the Court found compelling, as to it being an indicia
11 of reliability, the Court finds that it would be
12 appropriate to deny the motion to exclude, allow the
13 testimony in, but cert-- allow the testing in but,
14 certainly, there are issues that would go to the weight
15 of the evidence.

16 The issue, for example, of consistency, the
17 Court notes is contested. The issue with the regard to
18 the ability to refill the products is contested. You
19 may recall that Dr. Longo testified that it is -- it is
20 difficult, if not impossible, to open up the plastic
21 containers without showing evidence of tampering where
22 the bottle is opened.

23 With regard to the J -- the Shower to Shower
24 samples, which are during the timeframe that post-date
25 -- the Court -- post-date potentially manufactured by

1 Johnson & Johnson. The Court is still open to
2 exclusion on that. The Court is not satisfied from
3 that which has been submitted -- and I looked at the
4 pictures that were provided and, perhaps, you can point
5 me to other pictures. But during -- during the
6 timeframe that that product was used allegedly by the
7 plaintiff, Mr. Lanzo, it's unknown to the Court from
8 review of everything that's been submitted whether J&J
9 still manufactured the product or whether it went
10 beyond the licensing agreement or whether or not
11 Valiant was the actual manufacturer.

12 I mean, certainly, to the extent that J&J no
13 longer manufactured Shower to Shower during that time
14 period, those samples from that time period were not
15 able to be used in this case. Are there any questions
16 at this time with regard to the Court's ruling?

17 MR. MAIMON: None from the plaintiff, Your
18 Honor.

19 MR. FROST: None for defendants either, Your
20 Honor.

21 THE COURT: Okay. If we could get
22 clarification on that with regard to the Shower to
23 Shower prior to openings, the Court will certainly
24 amend its ruling with regard to that time. At this
25 point in time, it's open but the Court would like to

1 resolve that before we get to opening statements. So
2 tell --

3 MR. FROST: Absolutely, Your Honor. We will
4 -- we'll put together a letter with a submission that
5 should satisfy the Court one way or the other.

6 THE COURT: I appreciate that. Now, as you
7 know, the Court is in recess between this afternoon and
8 January 2 when we return. I've indicated that if you
9 need to reach out to me, I expect that at least one
10 member of my staff will be here during that time and
11 they're able to reach out to me in the event that you
12 do need to do so before I return.

13 I have a non-asbestos matter that I'm dealing
14 with at three o'clock today. Is there anything else
15 that you would like to discuss at this time?

16 MR. FROST: Yes, Your Honor. We have a
17 couple of different things that we want to discuss with
18 Your Honor.

19 THE COURT: Sure.

20 MR. FROST: I'll start with the easiest one.
21 We've met and conferred as to the number of alternates
22 to seat as well as the number of preemptory challenges.

23 THE COURT: Okay.

24 MR. FROST: And we've come to the decision of
25 -- we'll tell you the parties' positions and both sides

CERTIFICATION

I, SHERRY M. BACHMANN, the assigned transcriber, do hereby certify the foregoing transcript of proceedings, time from 1:34 p.m. to 1:55 p.m., is prepared in full compliance with the current Transcript Format for Judicial Proceedings and is a true and accurate non-compressed transcript of the proceedings as recorded.

Sherry Bachmann

SHERRY M. BACHMANN AOC #454
G&L TRANSCRIPTION OF NJ

Date: December 28, 2017

Exhibit 12

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

SUPERIOR COURT OF THE STATE OF CALIFORNIA
FOR THE COUNTY OF LOS ANGELES
DEPARTMENT 2 HON. GLORIA WHITE-BROWN, JUDGE

COORDINATED PROCEEDING) JCCP NO. 4674
SPECIAL TITLE (RULE 3.550))
)
LAOSD ASBESTOS CASES)
)
)
JOANNE ANDERSON AND GARY ANDERSON,)
) CASE NO. BC666513
)
) PLAINTIFFS,)
)
) PAGES 1689 - 1785
VS.)
)
)
BORG-WARNER CORPORATION BY ITS)
SUCCESSOR-IN-INTEREST BORG-WARNER)
MORSE TEC, INC., ET AL.,)
)
)
) DEFENDANTS.)
)
)

A.M. SESSION
REPORTER'S TRANSCRIPT OF PROCEEDINGS
MAY 15, 2018

APPEARANCES:

FOR THE PLAINTIFFS: SIMON GREENSTONE PANATIER BARTLETT
BY: DAVID C. GREENSTONE, ESQ.
CHRIS PANATIER, ESQ.
CONOR NIDEFFER, ESQ.
3780 KILROY AIRPORT WAY
SUITE 540
LONG BEACH, CALIFORNIA 90806

(APPEARANCES CONTINUED NEXT PAGE)

REPORTED BY: DEBORAH MORIN, CSR NO. 11558
OFFICIAL REPORTER PRO TEMPORE

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

2 (Pages 2 to 1690)

<p>1 APPEARANCES OF COUNSEL: (CONTINUED)</p> <p>2</p> <p>3 FOR THE DEFENDANTS BAILEY CROWE KUGLER & ARNOLD, LLP</p> <p>4 JJCI: CORI CUDABAC STEINMANN, ESQ.</p> <p>5 6550 BANK OF AMERICA PLAZA</p> <p>6 901 MAIN STREET</p> <p>7 DALLAS, TEXAS 75202</p> <p>8</p> <p>9 -AND-</p> <p>10</p> <p>11 KING & SPALDING</p> <p>12 BY: ALEXANDER G. CALFO, ESQ.</p> <p>13 633 WEST FIFTH STREET</p> <p>14 SUITE 1700</p> <p>15 LOS ANGELES, CALIFORNIA 90071</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p>26</p> <p>27</p> <p>28</p>	<p>Page 1689</p> <p>1 CASE NAME: ANDERSON VS. BORG-WAWRNER CORP.</p> <p>2 CASE NUMBER: BC666513</p> <p>3 WEST COVINA, CALIFORNIA MAY 15, 2018</p> <p>4 DEPARTMENT 2 HON. GLORIA WHITE-BROWN</p> <p>5 REPORTER: DEBORAH MORIN, CSR NO. 11558</p> <p>6 APPEARANCES: (AS HERETOFORE MENTIONED.)</p> <p>7 TIME: 9:01 A.M.</p> <p>8</p> <p>9 (THE FOLLOWING PROCEEDINGS HELD IN OPEN</p> <p>10 COURT OUTSIDE THE PRESENCE OF THE JURY:)</p> <p>11</p> <p>12 THE COURT: GOOD MORNING. WE'RE GOING TO GO</p> <p>13 ON THE RECORD IN THE JOANNE ANDERSON AND GARY ANDERSON</p> <p>14 VERSUS JOHNSON & JOHNSON AND JOHNSON & JOHNSON CONSUMER</p> <p>15 INCORPORATED, CASE NO. 666513.</p> <p>16 MAY THE RECORD REFLECT WE ARE OUTSIDE THE</p> <p>17 PRESENCE OF THE JURORS AND ALTERNATE JURORS. WE HAVE</p> <p>18 PLAINTIFFS' COUNSEL PRESENT, MR. CONOR NIDEFFER,</p> <p>19 MR. DAVID GREENSTONE AND MR. CHRIS PANATIER. AND FOR</p> <p>20 DEFENSE WE HAVE MR. ALEXANDER CALFO, MR. MEL BAILEY AND</p> <p>21 MS. CORI STEINMANN.</p> <p>22 MR. PANATIER: YOUR HONOR, BEFORE I FORGET,</p> <p>23 WHAT WAS PLAYED YESTERDAY, WE'RE JUST GOING TO MARK IT</p> <p>24 AS PLAINTIFFS' COURT 3, WHICH WAS THE SECTION WE STARTED</p> <p>25 YESTERDAY, JUST SO WE HAVE THAT ON THE RECORD.</p> <p>26 THE COURT: ALL RIGHT. SO THAT WILL BE MARKED</p> <p>27 PLAINTIFFS' 3. THAT'S THE TRANSCRIPT; CORRECT?</p> <p>28 MR. PANATIER: YES, YOUR HONOR. THAT'S THE</p>
<p>1 INDEX</p> <p>2</p> <p>3 MAY 15, 2018; A.M. SESSION</p> <p>4</p> <p>5 CHRONOLOGICAL INDEX OF WITNESSES</p> <p>6</p> <p>7 PLAINTIFFS' DIRECT CROSS REDIRECT RECROSS</p> <p>8 LONGO, WILLIAM 1713</p> <p>9</p> <p>10</p> <p>11 DEFENDANT'S DIRECT CROSS REDIRECT RECROSS</p> <p>12 (NONE)</p> <p>13</p> <p>14</p> <p>15 EXHIBITS</p> <p>16 PLAINTIFF'S MARKED RECEIVED WITHDRAWN</p> <p>17 EXHIBIT FOR I.D. IN EVD. OR REJECTED</p> <p>18 3 - JOHN HOPKINS VIDEO 1690</p> <p>19 DEPO TRANSCRIPT</p> <p>20 860 - LONGO C.V. 1714</p> <p>21 928 - BLOUNT ARTICLE 1733</p> <p>22 931 - 1995 COUNTING 1772</p> <p>23 PROTOCOL</p> <p>24</p> <p>25</p> <p>26</p> <p>27</p> <p>28</p> <p>29</p> <p>30</p> <p>31</p> <p>32</p> <p>33</p> <p>34</p> <p>35</p> <p>36</p> <p>37</p> <p>38</p> <p>39</p> <p>40</p> <p>41</p> <p>42</p> <p>43</p> <p>44</p> <p>45</p> <p>46</p> <p>47</p> <p>48</p> <p>49</p> <p>50</p> <p>51</p> <p>52</p> <p>53</p> <p>54</p> <p>55</p> <p>56</p> <p>57</p> <p>58</p> <p>59</p> <p>60</p> <p>61</p> <p>62</p> <p>63</p> <p>64</p> <p>65</p> <p>66</p> <p>67</p> <p>68</p> <p>69</p> <p>70</p> <p>71</p> <p>72</p> <p>73</p> <p>74</p> <p>75</p> <p>76</p> <p>77</p> <p>78</p> <p>79</p> <p>80</p> <p>81</p> <p>82</p> <p>83</p> <p>84</p> <p>85</p> <p>86</p> <p>87</p> <p>88</p> <p>89</p> <p>90</p> <p>91</p> <p>92</p> <p>93</p> <p>94</p> <p>95</p> <p>96</p> <p>97</p> <p>98</p> <p>99</p> <p>100</p> <p>101</p> <p>102</p> 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<p>922</p> <p>923</p> <p>924</p> <p>925</p> <p>926</p> <p>927</p> <p>928</p> <p>929</p> <p>930</p> <p>931</p> <p>932</p> <p>933</p> <p>934</p> <p>935</p> <p>936</p> <p>937</p> <p>938</p> <p>939</p> <p>940</p> <p>941</p> <p>942</p> <p>943</p> <p>944</p> <p>945</p> <p>946</p> <p>947</p> <p>948</p> <p>949</p> <p>950</p> <p>951</p> <p>952</p> <p>953</p> <p>954</p> <p>955</p> <p>956</p> <p>957</p> <p>958</p> <p>959</p> <p>960</p> <p>961</p> <p>962</p> <p>963</p> <p>964</p> <p>965</p> <p>966</p> <p>967</p> <p>968</p> <p>969</p> <p>970</p> <p>971</p> <p>972</p> <p>973</p> <p>974</p> <p>975</p> <p>976</p> <p>977</p> <p>978</p> <p>979</p> <p>980</p> <p>981</p> <p>982</p> <p>983</p> <p>984</p> <p>985</p> <p>986</p> <p>987</p> <p>988</p> <p>989</p> <p>990</p> <p>991</p> <p>992</p> <p>993</p> <p>994</p> <p>995</p> <p>996</p> <p>997</p> <p>998</p> <p>999</p> <p>1000</p>	<p>Page 1690</p> <p>1 "AS PLAYED" FOR WHAT WE STARTED LATE AFTERNOON AND WHAT</p> <p>2 WE'LL FINISH WHEN WE HAVE TIME.</p> <p>3</p> <p>4 (PLAINTIFFS' EXHIBIT 3 MARKED FOR</p> <p>5 IDENTIFICATION.)</p> <p>6</p> <p>7 THE COURT: JUST A SCHEDULING ISSUE. I HAVE</p> <p>8 TO LEAVE TODAY AT NO LATER AT A QUARTER TIL 12:00. WE</p> <p>9 HAVE A MEETING IN POMONA. JUDGE'S MEETING. AND SO I'LL</p> <p>10 PROBABLY RECESS FROM 11:45 TO 1:45.</p> <p>11 MR. PANATIER: OKAY. THANKS, YOUR HONOR.</p> <p>12 THE COURT: ANY ISSUES THAT NEED TO BE</p> <p>13 ADDRESSED?</p> <p>14 MR. BAILEY: YOUR HONOR, BRIEFLY. AS YOU</p> <p>15 RECALL, WE HAD A MOTION IN LIMINE REGARDING DR. LONGO.</p> <p>16 HE'S HERE IN THE COURTROOM. I DON'T THINK HE'LL BE</p> <p>17 CALLED AS A WITNESS IN THIS HEARING. SO WE WOULD</p> <p>18 REQUEST THAT HE STEP IN THE HALL.</p> <p>19 THE COURT: OKAY. DR. LONGO, IF YOU WOULD</p> <p>20 EXCUSE YOURSELF.</p> <p>21 THE WITNESS: YES, YOUR HONOR.</p> <p>22 MR. BAILEY: YOUR HONOR, I DON'T KNOW HOW</p> <p>23 FAMILIAR YOU ARE WITH THIS MOTION. IT WAS FILED SOME</p> <p>24 TIME AGO. THIS REALLY IS AT THE CORE OF THE METHODOLOGY</p> <p>25 THAT DR. LONGO USES. I THINK THE MOTION IS PRETTY WELL</p> <p>26 WRITTEN AND THAT IT SETS OUT THE THREE CRITICISMS AND</p> <p>27 CONCERNS THAT WE HAVE FROM HIS TESTIMONY.</p> <p>28 AS YOU KNOW FROM THE MOTION, HE SEEKS TO</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

3 (Pages 1691 to 1694)

Page 1691	Page 1693
<p>1 TESTIFY ABOUT TESTING THAT HE'S DONE ON A SERIES OF</p> <p>2 JOHNSON & JOHNSON BOTTLES RANGING FROM SOMEWHERE BETWEEN</p> <p>3 1953 IN VINTAGE TO -- UP TO THE ANDERSON BOTTLES THAT I</p> <p>4 GUESS ARE IN 2004 TIME FRAME.</p> <p>5 THESE BOTTLES, AS YOU CAN TELL FROM THE</p> <p>6 MOTION, CAME FROM ALL SOURCES: EBAY, PLAINTIFFS'</p> <p>7 LAWYERS. I THINK THERE ARE SERIOUS QUESTIONS ABOUT THE</p> <p>8 CHAIN OF CUSTODY.</p> <p>9 THE CHAIN OF CUSTODY WHEN WE'RE TALKING ABOUT</p> <p>10 TESTING A BOTTLE FROM SOME TIME BEFORE 1953 DOES NOT</p> <p>11 BEGIN WHEN IT SHOWS UP AT A LAWYER'S OFFICE. IT BEGINS,</p> <p>12 IN A CASE LIKE THIS, YOU WOULD THINK, TRACKING THE</p> <p>13 BOTTLE BACK TO THE POINT WHERE WE COULD BE SURE THAT</p> <p>14 WHAT'S INSIDE OF THAT BOTTLE THAT'S 50, 60, 70 YEARS OLD</p> <p>15 IS SIMILAR TO WHAT MS. ANDERSON CLAIMS TO HAVE BEEN</p> <p>16 EXPOSED TO.</p> <p>17 FOR A NUMBER OF THESE, ALMOST EVERY ONE OF</p> <p>18 THESE, OTHER THAN THE ANDERSON BOTTLES, THERE'S NO</p> <p>19 TESTIMONY AT ALL ON THE RECORD, NOR WILL THERE EVER BE,</p> <p>20 ABOUT WHERE THESE BOTTLES CAME FROM, WHERE THEY WERE</p> <p>21 STORED, HOW THEY WERE USED. THE CHAIN OF CUSTODY JUST</p> <p>22 SIMPLY DOES NOT EXIST UNTIL SOME LAWYER BOUGHT THEM AND</p> <p>23 PROVIDED THEM TO DR. LONGO.</p> <p>24 THE COURT: LET ME TELL YOU -- LET ME --</p> <p>25 BEFORE YOU PROCEED, LET ME GIVE YOU MY TENTATIVE ON THIS</p> <p>26 FIRST AND THEN I'LL HEAR FROM COUNSEL.</p> <p>27 MR. BAILEY: SURE.</p> <p>28 THE COURT: OKAY. SO I AM FAMILIAR WITH THIS</p>	<p>1 HOWEVER, THERE STILL APPEARS TO BE A CHAIN OF CUSTODY</p> <p>2 ISSUE. THERE ALSO, MORE IMPORTANTLY, APPEARS TO BE A</p> <p>3 RELEVANCE ISSUE IN REGARDS TO THOSE ITEMS.</p> <p>4 AS TO THE TWO BABY POWDER BOTTLES THAT</p> <p>5 PLAINTIFFS PROVIDED, I FIND THAT THERE IS NO CHAIN OF</p> <p>6 CUSTODY ISSUE REGARDING THOSE BECAUSE THE PLAINTIFFS</p> <p>7 CAME IN. THEY TESTIFIED AS TO THOSE BOTTLES.</p> <p>8 COUNSEL WAS ABLE TO QUESTION ABOUT THOSE</p> <p>9 BOTTLES, HOW THEY WERE STORED, THINGS OF THAT SORT. AND</p> <p>10 THAT INFORMATION IS BEFORE THE JURY, AND I THINK FOR</p> <p>11 PURPOSES OF THIS TRIAL, THE ANALYZATION OF THOSE TWO</p> <p>12 BOTTLES, THE COURT WILL ALLOW TESTIMONY REGARDING THOSE</p> <p>13 TWO BOTTLES BECAUSE OF THE BACKGROUND ON THOSE BOTTLES</p> <p>14 THAT WAS TESTIFIED TO IN REGARDS TO -- IN REGARDS TO HOW</p> <p>15 THEY WERE KEPT, WHERE THEY WERE KEPT, THINGS OF THAT</p> <p>16 SORT, EVEN THOUGH THERE WAS SOME QUESTION REGARDING SOME</p> <p>17 OF THE STORAGE, BUT I THINK THERE WAS SUFFICIENT</p> <p>18 FOUNDATION LAID REGARDING THOSE TWO BOTTLES.</p> <p>19 THE COURT DOES NOT HAVE A PROBLEM WITH THE</p> <p>20 BOTTLES THAT WERE ACTUALLY PURCHASED FROM STORES AS IT</p> <p>21 APPEARS THAT THOSE BOTTLES WERE PURCHASED IN A BRAND-NEW</p> <p>22 STATE. I BELIEVE IT WAS -- THERE WAS INFORMATION THAT</p> <p>23 THEY WERE SEALED, PROPERLY SEALED. AND THOSE ITEMS WERE</p> <p>24 THEN TESTED. AND SO THERE DOES NOT APPEAR TO BE A CHAIN</p> <p>25 OF CUSTODY ISSUE OR RELIABILITY ISSUE IN REGARDS TO</p> <p>26 THOSE PARTICULAR ITEMS, AND AUTHENTICITY ISSUE IS ALSO</p> <p>27 AT THE CRUX OF THESE ITEMS.</p> <p>28 IN REGARDS TO THE BOTTLES FROM OTHER LAW</p>
Page 1692	Page 1694
<p>1 MOTION. I DID READ IT IN ITS ENTIRETY, AND THE COURT'S</p> <p>2 TENTATIVE WOULD BE -- AND THERE'S ABOUT TWO OR THREE</p> <p>3 PARTS TO THE COURT'S RULING.</p> <p>4 BUT IN REGARDS TO THE CHAIN OF CUSTODY ISSUE,</p> <p>5 THE EVALUATION ISSUE, THE COURT DOES HAVE A REAL ISSUE</p> <p>6 WITH THE CHAIN OF CUSTODY AND THE FRY STANDARD. I THINK</p> <p>7 THERE IS, BASED UPON EVERYTHING THAT I READ, NO</p> <p>8 SUFFICIENT CHAIN OF CUSTODY IN REGARDS TO A MAJORITY OF</p> <p>9 THE BABY POWDER PRODUCTS THAT WERE TESTIFIED BY</p> <p>10 DR. LONGO. IN PARTICULAR, I DO SEE A REAL ISSUE WITH</p> <p>11 THE EBAY ITEMS.</p> <p>12 THERE IS NO CHAIN OF CUSTODY OTHER THAN THE</p> <p>13 FACT THAT THESE WERE PURCHASED ON AN EBAY. WE DON'T</p> <p>14 KNOW HOW THEY WERE STORED. WE DON'T KNOW WHETHER OR NOT</p> <p>15 IT'S THE ORIGINAL PRODUCT. YOU DON'T KNOW WHAT</p> <p>16 CONDITIONS THEY WERE STORED IN AND THINGS OF THAT SORT.</p> <p>17 SO THERE'S A REAL PROBLEM WITH THE EBAY BABY POWDER</p> <p>18 SAMPLES THAT WERE TESTED.</p> <p>19 I ALSO FIND A PROBLEM IN REGARDS TO ITEMS THAT</p> <p>20 WERE TESTED BEFORE THE TIME PERIOD THAT MRS. ANDERSON</p> <p>21 WAS EXPOSED TO THE BABY POWDER AT ISSUE IN THIS CASE,</p> <p>22 WHICH SHE INDICATES STARTED SOMETIME IN THE EARLY 1970S</p> <p>23 WHEN SHE HAD HER FIRST CHILD.</p> <p>24 THERE'S ALSO THE CHAIN OF CUSTODY AND</p> <p>25 RELIABILITY ISSUES REGARDING THOSE, I'LL CALL THEM</p> <p>26 HISTORICAL BOTTLES AS WELL, SINCE THERE IS A QUESTION AS</p> <p>27 TO HOW THEY WERE STORED AS WELL. I UNDERSTAND THAT SOME</p> <p>28 OF THEM DID COME FROM MUSEUMS AND THINGS OF THAT SORT.</p>	<p>1 FIRMS, I HAD THE SAME ISSUES. THE COURT SEES THE SAME</p> <p>2 ISSUES IN REGARDS TO RELIABILITY AND AUTHENTICITY OF</p> <p>3 CHAIN OF CUSTODY.</p> <p>4 ONCE AGAIN, THE FACT THAT THEY WERE RECEIVED</p> <p>5 FROM OTHER LAW FIRMS, THAT'S ONLY PART OF THE CHAIN OF</p> <p>6 CUSTODY. WHERE THEY CAME FROM BEFORE THAT -- THERE DOES</p> <p>7 NOT APPEAR TO BE ANY TESTIMONY REGARDING -- THERE WILL</p> <p>8 NOT BE ANY TESTIMONY REGARDING WHERE THOSE CAME FROM,</p> <p>9 HOW THEY WERE STORED, WHAT MANNER THEY WERE STORED IN,</p> <p>10 THINGS OF THAT SORT.</p> <p>11 I THINK THERE WAS ONE BOTTLE. I CAN'T RECALL.</p> <p>12 I BELIEVE IT WAS FROM ANOTHER PLAINTIFF'S COUNSEL WHERE</p> <p>13 THERE WAS SOME INFORMATION PROVIDED REGARDING CHAIN OF</p> <p>14 CUSTODY THAT IT CAME FROM -- I CAN'T RECALL RIGHT OFF</p> <p>15 THE TOP OF MY HEAD, BUT I KNOW THERE WAS ONE BOTTLE THAT</p> <p>16 WAS IN A LITTLE BIT OF A DIFFERENT SITUATION THAT WAS</p> <p>17 ALSO PART OF THIS GROUP.</p> <p>18 AND SO THIS COURT HAS -- I'LL LEAVE IT AT THAT</p> <p>19 FOR NOW. THAT WILL BE THIS COURT'S TENTATIVE RULING</p> <p>20 REGARDING THE ANALYZATION OF THE BOTTLES.</p> <p>21 AS TO DR. LONGO'S METHODOLOGY, THE COURT WOULD</p> <p>22 ALLOW DR. LONGO TO TESTIFY AS TO THE METHODS THAT HE</p> <p>23 USED IN REGARDS TO ANALYZING SAMPLES AND HIS ANALYZATION</p> <p>24 AS TO OTHER ITEMS AS WELL. I THINK THAT'S A</p> <p>25 DETERMINATION FOR THE JURORS TO MAKE IN REGARDS TO</p> <p>26 WHETHER OR NOT THEY ACCEPT HIS OPINION OR NOT AND WHAT</p> <p>27 WEIGHT THEY GIVE HIS OPINION. SO THE COURT WOULD ALLOW</p> <p>28 DR. LONGO'S METHODOLOGY OR HIS METHODS THAT HE RELIED</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

4 (Pages 1695 to 1698)

Page 1695	Page 1697
<p>1 UPON IN REGARDS TO TESTING AND ANY OTHER TEST RESULTS</p> <p>2 0THAT HE MAY TESTIFY TO OTHER THAN THE SAMPLE BOTTLES OF</p> <p>3 THE BABY POWDER.</p> <p>4 THE THIRD ISSUE IS IN REGARDS TO DR. LONGO'S</p> <p>5 OPINION THAT MRS. ANDERSON WAS LIKELY EXPOSED TO</p> <p>6 ASBESTOS FROM HER USE FROM JOHNSON'S BABY POWDER. I</p> <p>7 THINK THAT THAT IS SPECULATIVE AS TO HIS OPINION AS</p> <p>8 REGARDING THE FACT THAT IT WAS THE EXPOSURE TO THE</p> <p>9 JOHNSON'S BABY POWDER IN AND OF ITSELF THAT RESULTED IN</p> <p>10 THE MESOTHELIOMA OR THAT -- LET ME BACK UP A LITTLE BIT.</p> <p>11 I THINK IT WAS PHRASED A LITTLE DIFFERENT WAY</p> <p>12 THAT MRS. ANDERSON WAS LIKELY EXPOSED TO ASBESTOS FROM</p> <p>13 HER USE FROM JOHNSON'S BABY POWDER. THAT'S WHAT DEFENSE</p> <p>14 IS ASKING TO BE EXCLUDED.</p> <p>15 MR. BAILEY: YOUR HONOR, IF I MAY. I'LL WAIT</p> <p>16 UNTIL YOU FINISH.</p> <p>17 THE COURT: JUST GIVE ME A MOMENT. MY NOTE</p> <p>18 THAT I WROTE TO MYSELF INDICATES THAT MY TENTATIVE WOULD</p> <p>19 BE TO GRANT THAT MOTION IN LIMINE AS TO THAT PART OF THE</p> <p>20 MOTION. HOWEVER, I THINK THAT THAT'S NOT FULLY CORRECT.</p> <p>21 I THINK THAT THERE'S LIKE TWO PARTS. THE BINOMIAL --</p> <p>22 BINOMIAL TABLES.</p> <p>23 MR. PANATIER: THAT'S MOOT. HE'S NOT GOING TO</p> <p>24 TESTIFY ABOUT THE BINOMIAL TABLES, YOUR HONOR.</p> <p>25 THE COURT: OKAY. SO AS TO HIS OPINION THAT</p> <p>26 SHE WAS LIKELY EXPOSED TO ASBESTOS, THE COURT WOULD</p> <p>27 ALLOW AS TO THAT PART. ONCE AGAIN, HE WOULD HAVE TO LAY</p> <p>28 A PROPER -- A PROPER FOUNDATION WOULD HAVE TO BE LAID IN</p>	<p>1 MR. BAILEY: OKAY. I UNDERSTAND.</p> <p>2 MR. PANATIER: YOUR HONOR, SO IF I CAN -- IF I</p> <p>3 CAN JUST SAY A FEW THINGS. BUT, YOU KNOW, I ACTUALLY</p> <p>4 HAVE THE WITNESS HERE, AND YOUR HONOR HAS SAID THAT YOUR</p> <p>5 TENTATIVE IS TO EXCLUDE SOME OF THIS WITNESS' TESTIMONY,</p> <p>6 AND I WOULD LIKE TO BRING THE WITNESS IN TO MAKE A</p> <p>7 RECORD ON THAT BECAUSE I THINK ONCE YOU HAVE AN</p> <p>8 APPRECIATION FOR EVERYTHING THAT HAS BEEN DONE TO ASSURE</p> <p>9 THAT THESE ARE RELIABLE SAMPLES, I THINK YOUR HONOR WILL</p> <p>10 ACTUALLY CONSIDER ALLOWING THE TESTIMONY ON ALL THE</p> <p>11 SAMPLES.</p> <p>12 THE COURT: WELL, YOU CAN BRING HIM IN, BUT I</p> <p>13 DON'T SEE HOW A FOUNDATION CAN BE LAID REGARDING THE</p> <p>14 EBAY SAMPLES. I MEAN, IT ESCAPES MY IMAGINATION AS TO</p> <p>15 HOW A FOUNDATION CAN BE LAID BECAUSE THERE'S NO WAY THAT</p> <p>16 ANYONE CAN COME IN AND TESTIFY AS TO HOW THOSE BOTTLES</p> <p>17 WERE STORED FOR ALL THOSE YEARS BEFORE THEY WERE</p> <p>18 PURCHASED FROM SOMEONE FROM -- FROM SOMEONE ON EBAY AND</p> <p>19 THE AUTHENTICITY OF THOSE BOTTLES.</p> <p>20 I READ EVERYTHING ABOUT IT. DIDN'T APPEAR</p> <p>21 THAT THERE WERE ANY PRY MARKS ON THE BOTTLES OF BABY</p> <p>22 POWDER. I ALSO READ THAT THERE ARE WAYS OF PUTTING IN</p> <p>23 NEW POWDER WITHOUT SHOWING ANY TYPE OF EFFECTS OF DOING</p> <p>24 THAT.</p> <p>25 SO YOU CAN CALL HIM AND YOU CAN ATTEMPT TO DO</p> <p>26 SO.</p> <p>27 MR. PANATIER: I'M GOING TO PROVIDE A LITTLE</p> <p>28 BIT OF LEGAL AUTHORITY TO THE COURT AND THEN I'LL CALL</p>
Page 1696	Page 1698
<p>1 ORDER FOR HIM TO GIVE THAT OPINION. AND ONCE AGAIN, IT</p> <p>2 WOULD JUST -- IT WOULD BE AN OPINION AND THE JURORS</p> <p>3 WOULD MAKE A DETERMINATION AS TO WHAT -- WHETHER OR NOT</p> <p>4 THEY RELY ON THAT OPINION AND HOW MUCH WEIGHT THEY WOULD</p> <p>5 GIVE THAT OPINION.</p> <p>6 OKAY.</p> <p>7 MR. BAILEY: THANK YOU, YOUR HONOR. REALLY</p> <p>8 JUST BRIEFLY, I'D JUST LIKE TO FOCUS ON THAT, AND THAT</p> <p>9 IS HIS ABILITY TO SAY SOMEHOW STATISTICALLY THAT MORE</p> <p>10 LIKELY THAN NOT MRS. ANDERSON WAS EXPOSED TO ASBESTOS AS</p> <p>11 A RESULT OF HIS TESTING. BECAUSE WHAT HE'S BASING THAT</p> <p>12 OPINION ON IS THE OVERALL RESULTS OF 30-PLUS TESTS THAT</p> <p>13 YOU, BY YOUR RULING, HAVE EXCLUDED.</p> <p>14 SO IF THAT'S THE BASIS OF THAT OPINION, THEN</p> <p>15 THAT OPINION SHOULD BE STRICKEN AS WELL BECAUSE</p> <p>16 OTHERWISE WE'RE RIGHT BACK WHERE WE STARTED. IF HE</p> <p>17 WANTS TO TALK ABOUT THE TWO ANDERSON BOTTLES AND</p> <p>18 WHATEVER CONCLUSION HE DRAWS FROM THAT, THAT SEEMS FAIR</p> <p>19 FOR CROSS-EXAMINATION. BUT STATISTICALLY TO LOOK AT AND</p> <p>20 TESTIFY ABOUT THE PROBABILITY OF SOMETHING HAPPENING</p> <p>21 BASED ON 30 BOTTLES THAT YOUR HONOR HAS INDICATED HE'S</p> <p>22 NOT GOING TO BE TESTIFYING ABOUT, SORT OF UNDERMINES THE</p> <p>23 FIRST PART OF YOUR RULING.</p> <p>24 THE COURT: THAT'S WHY I INDICATED THAT BASED</p> <p>25 UPON PROPER FOUNDATION IS LAID, THE COURT WOULD LIKELY</p> <p>26 ALLOW HIM TO STILL -- TO STILL GIVE HIS OPINION. THEY</p> <p>27 MAY BE ABLE TO LAY A FOUNDATION BASED ON OTHER FACTORS,</p> <p>28 NOT JUST ON THOSE SAMPLES. I DON'T KNOW.</p>	<p>1 DR. LONGO ON THIS.</p> <p>2 SO HERE'S THE THING. THEY DON'T CITE ANY</p> <p>3 AUTHORITY ABOUT EBAY. THERE IS NO AUTHORITY ABOUT EBAY.</p> <p>4 THREE COURTS NOW HAVE HEARD THIS AND HAVE ADMITTED THE</p> <p>5 SAMPLES AND HERE'S WHY. BECAUSE THEY ARE WHAT THEY</p> <p>6 PURPORT TO BE. ONE-THIRD OF THEM ARE OFF THE SHELF. SO</p> <p>7 THAT'S WHERE WE NEED TO START IS A THIRD OF THESE ARE</p> <p>8 OFF THE SHELF.</p> <p>9 THE COURT: AND I'VE ALREADY SAID THE ONES</p> <p>10 FROM OFF THE SHELF --</p> <p>11 MR. PANATIER: I UNDERSTAND.</p> <p>12 THE COURT: -- I SAID THOSE WOULD BE ALLOWED.</p> <p>13 MR. PANATIER: THOSE ARE GOOD, I UNDERSTAND.</p> <p>14 AND SOME OF THOSE ARE ALSO FROM THE PEOPLE WHO OWNED</p> <p>15 THEM.</p> <p>16 HERE'S THE PROBLEM. THEY'VE NOW HAD THEIR OWN</p> <p>17 EXPERTS LOOK AT THE SAMPLES. THIS IS A BATTLE OF THE</p> <p>18 EXPERTS. THEIR EXPERTS, THEY'VE BEEN ASKED, "IS THERE</p> <p>19 ANY EVIDENCE OF TAMPERING? IS THERE ANY EVIDENCE THAT</p> <p>20 THESE ARE NOT WHAT THEY PURPORT TO BE?"</p> <p>21 AND NO ONE, NOT THE LAWYERS, NOT THEIR</p> <p>22 EXPERTS, HAVE SAID THAT THEY ARE ANYTHING BUT JOHNSON'S</p> <p>23 BABY POWDER. NOBODY.</p> <p>24 THE COURT: BUT THAT'S NOT THE ONLY ISSUE.</p> <p>25 MR. PANATIER: AND I'M GOING TO GET TO YOUR</p> <p>26 HONOR'S ISSUE, I BELIEVE. SO LET ME GO HERE TO THE LAW.</p> <p>27 SO THIS IS BUCKWALTER VERSUS AIRLINE TRAINING</p> <p>28 AND IT SAYS:</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

5 (Pages 1699 to 1702)

Page 1699	Page 1701
<p>1 "THE STANDARD FOR RULING ON WHETHER 2 MATTERS MAY REASONABLY BE RELIED UPON." 3 AGAIN, THIS IS -- THEY'VE FRAMED IT AS AN 4 AUTHENTICITY MOTION. IT WOULD ONLY BE AN AUTHENTICITY 5 MOTION -- THAT WOULD ONLY BE PROPER IF THEY WERE TRYING 6 TO INTRODUCE THESE INTO EVIDENCE. THE QUESTION IS CAN 7 AN EXPERT REASONABLY RELY UPON THEM? AND THAT'S THE LAW 8 THAT WE'RE UNDER. 9 THEY HAVE COMPLETELY MISCHARACTERIZED THE LAW 10 BECAUSE HERE'S WHY. IN A CRIMINAL CONTEXT, CRIMINAL 11 CONTEXT. SO YOU HAVE A KNIFE THAT THE POLICE FIND IN A 12 BACKYARD. THAT COMES IN IN EVERY CASE. THE DEFENDANT 13 IS NEVER GOING TO STIPULATE THAT THAT IS AUTHENTIC, THAT 14 THAT IS HIS KNIFE. 15 THE JURY GETS TO DECIDE. THE POLICE COME IN. 16 THEY DO TESTING ON IT. THE CHAIN OF CUSTODY STARTS WHEN 17 THEY FIND THE KNIFE, JUST LIKE THE CHAIN OF CUSTODY 18 BEGINS WHEN WE FIND THE SAMPLES. 19 THE COURT: NOT NECESSARILY SO. THERE ARE 20 MOTIONS THAT IN CRIMINAL CASES -- WHICH I SAT IN 21 CRIMINAL COURT -- 22 MR. PANATIER: I UNDERSTAND THAT. 23 THE COURT: -- 14 YEARS OR SO. REGARDING 24 THOSE PARTICULAR ISSUES, 1538.5 MOTIONS AND THINGS OF 25 THAT SORT. AND IF THERE IS NOT A PROPER CHAIN OF 26 CUSTODY, THOSE ITEMS ARE EXCLUDED. SO YOUR STATEMENT IS 27 NOT CORRECT. 28 MR. PANATIER: BUT THAT CHAIN OF CUSTODY FOR</p>	<p>1 LOOK AT -- THIS IS COMMENTS TO EVIDENCE CODE 2 SECTION 1400, YOUR HONOR. THEY TRIER OF FACT 3 INDEPENDENTLY DETERMINES AUTHENTICITY WHEN IT'S A 4 CENTRAL ISSUE. 5 HERE'S WHAT DR. LONGO DID, THOUGH. THESE ARE 6 ALL THE SAMPLES THAT HE TESTED. AND WHAT HE DID, HE DID 7 SEVERAL THINGS TO VERIFY THAT THESE ARE WHAT THEY 8 PURPORT TO BE. HE ACTUALLY DID A PARTICLE SIZE 9 DISTRIBUTION -- 10 THE COURT: COUNSEL, WAIT A SECOND. HE'S BACK 11 IN THE COURTROOM. 12 MR. PANATIER: WE ASKED HIM BACK IN TO 13 TESTIFY. 14 OKAY. CAN YOU STEP OUT FOR A SECOND, BILL. 15 16 (DR. LONGO EXITS THE COURTROOM.) 17 18 MR. PANATIER: SO FOR ALL 17 POSITIVES, HE DID 19 A SIZE DISTRIBUTION, AND HE COMPARED IT TO THE OFF THE 20 SHELF AND THEY ALL MATCH. THEY'RE ALL JOHNSON'S BABY 21 POWDER, YOUR HONOR. HE DID THIS FOR EVERY SINGLE 22 POSITIVE SAMPLE. HE ANALYZED OVER 5,000 PARTICLES. FOR 23 EVERY SINGLE ONE, THEY ARE THE SAME. THEY ARE JOHNSON'S 24 BABY POWDER. 25 SO HE HAD THE CONTROL HE PULLED OFF THE SHELF, 26 AND THEN HE COMPARED THEM WITH THE POSITIVE SAMPLE. HE 27 MEASURED 5,000 PARTICLES IN EVERY SINGLE ONE, AND 28 THEY'RE ALL THE SAME.</p>
Page 1700	Page 1702
<p>1 THE COPS STARTS WHEN THEY FIND THE KNIFE; RIGHT? THERE 2 IS A CHAIN OF CUSTODY FOR EVERY SINGLE BOTTLE HERE WHEN 3 THE BOTTLES WERE LOCATED. JUST LIKE THERE IS A CHAIN OF 4 CUSTODY FOR THE KNIFE ONCE THE KNIFE IS FOUND. 5 SO THIS IDEA OF A CHAIN OF CUSTODY THAT GOES 6 BACK TO WHEN IT WAS PURCHASED IS COMPLETELY NONEXISTENT 7 IN THE LAW. THE QUESTION IS, AND WHAT THE LAW SAYS IS, 8 IS THIS SOMETHING THAT AN EXPERT WOULD REASONABLY RELY 9 UPON? 10 LET ME GIVE YOU ANOTHER CASE. THIS IS 11 EXTREMELY IMPORTANT. PEOPLE VERSUS DOCKINS. THE BURDEN 12 OF AUTHENTICITY IS MET BY A SHOWING THAT THE EVIDENCE IS 13 A REASONABLE REPRESENTATION OF WHAT IT IS ALLEGED TO 14 PORTRAY. 15 KEEP IN MIND, IN THIS CASE THERE IS NO 16 ALLEGATION THAT IT IS NOT JOHNSON'S BABY POWDER. NONE. 17 NO EVIDENCE. THEY'VE HAD THE SAMPLES. THEY'VE HAD 18 DR. LONGO'S TESTIMONY SINCE LAST AUGUST, AND THERE IS NO 19 ALLEGATION THAT IT ISN'T WHAT IT PURPORTS TO BE. 20 AND THEN JAZIRI VERSUS MOUND. THIS IS 2009. 21 THE FACT THAT CONFLICTING INFERENCES, THEY 22 WANT TO MAKE CONFLICTING INFERENCE, CAN BE DRAWN 23 REGARDING AUTHENTICITY GOES TO ITS WEIGHT AND NOT ITS 24 ADMISSIBILITY. AND THE CASE LAW IN CALIFORNIA IS VERY 25 CLEAR THAT WHEN ONE SIDE IS ARGUING, THE CENTRAL ISSUE 26 IS WHETHER OR NOT IT IS AUTHENTIC OR NOT. THAT IS AN 27 ISSUE FOR THE JURY. THE JURY GETS TO DECIDE WHETHER OR 28 NOT THEY THINK IT IS WHAT IT PURPORTS TO BE.</p>	<p>1 SO WHEN THE LAW SAYS THE QUESTION IS WHETHER 2 OR NOT THIS WOULD BE SOMETHING THAT AN EXPERT CAN 3 REASONABLY RELY UPON, HE DID THE WORK. HE DID THE WORK. 4 HE DIDN'T JUST SAY, WELL, IT COMES IN JOHNSON & JOHNSON. 5 I'M GOING TO ASSUME THAT'S WHAT IT IS. EVEN THOUGH OF 6 COURSE THAT'S A GOOD BASIS TO DO IT, BUT HE ACTUALLY 7 TOOK WHAT'S INSIDE AND DID A PARTICLE SIZE DISTRIBUTION 8 TO MATCH THEM. AND THEY ALL MATCH. 9 THE SECOND THING IS -- 10 THE COURT: LET ME ASK YOU A QUESTION. WHEN 11 YOU SAY HE DID A PARTICLE SIZE ANALYSIS, IS THERE A 12 DIFFERENCE IN REGARDS TO PARTICLE SIZE AS TO OTHER 13 BRANDS OF BABY POWDER? 14 MR. PANATIER: YES. IN FACT, WE ATTACH TO OUR 15 RESPONSE A DOCUMENT FROM THEIR SUPPLIER THAT SAID THAT 16 THE PARTICLE SIZE DISTRIBUTIONS WILL VARY WILDLY FROM 17 MANUFACTURER TO MANUFACTURER. SO THAT'S THEIR SUPPLIER 18 SAYING THAT, AND DR. LONGO MATCHED THEM ALL FOR JOHNSON 19 & JOHNSON. 20 THEN THE NEXT THING THEY DID IS THEY ACTUALLY 21 DEMONSTRATED HOW THERE'S NO WAY -- THERE IS NO WAY TO 22 GET THESE LIDS OFF WITHOUT HURTING THE CAN. FOR THE 23 CANS -- AND THEN YOUR HONOR SAID YOU SAW THE LIDS. THIS 24 IS DR. LONGO'S WORK THAT HE DID. HE USED A 25 STEREO MICROSCOPE. HE TOOK A PICTURE OF IT BEFORE AND 26 THEN SHOWED WHAT HE HAD TO DO TO GET THIS THAT OFF. 27 THIS LID DOES NOT SCREW OFF. THERE'S NO WAY TO GET IT 28 OFF BUT TO PRY IT OFF AND DAMAGE IT.</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

6 (Pages 1703 to 1706)

Page 1703	Page 1705
<p>1 SO THEY TOOK THE STEREOMICROSCOPE TO EVERY</p> <p>2 SINGLE ONE TO CHECK WHETHER OR NOT ANY OF THIS HAD</p> <p>3 HAPPENED. IT NEVER HAD. SO YOU HAVE ONE -- NO EVIDENCE</p> <p>4 OF TAMPERING. YOU HAVE NO EVIDENCE OF CONTAMINATION.</p> <p>5 YOU'VE GOT A MATCHING PARTICLE SIZE FOR EVERY SINGLE</p> <p>6 SAMPLE.</p> <p>7 THEN, YOUR HONOR, THERE'S ONLY ONE OTHER THING</p> <p>8 THAT THEY HAVE, WHICH IS THIS, THIS YOUTUBE VIDEO OF A</p> <p>9 LADY SAYING HERE'S HOW I CAN REFILL IT THROUGH THE</p> <p>10 HOLES.</p> <p>11 OKAY. THEY CAN CROSS HIM ON THAT, AND HE WILL</p> <p>12 TESTIFY THAT THE IDEA THAT THAT HAPPENED ON 35 SAMPLES</p> <p>13 IS UTTERLY LUDICROUS, THAT SOMEHOW ALL OF THESE</p> <p>14 INDEPENDENT PEOPLE AROUND THE COUNTRY, COLLECTORS, THE</p> <p>15 PEOPLE WHO SOLD THEM ON EBAY, THE PEOPLE WHO BOUGHT THEM</p> <p>16 OFF THE SHELF, THAT THEY ALL SOMEHOW DECIDED TO REFILL</p> <p>17 IT WITH SOMETHING ELSE?</p> <p>18 WE KNOW THEY DIDN'T, ONE, BECAUSE THERE'S NO</p> <p>19 EVIDENCE THEY DID. BUT TWO, BECAUSE THE CONTROLS HE</p> <p>20 BOUGHT OFF THE SHELF, THE JOHNSON & JOHNSON CONTROLS,</p> <p>21 THE PARTICLE SIZE DISTRIBUTION MATCHES EXACTLY. AND SO</p> <p>22 WE HAVE A REASONABLE -- ABSOLUTELY REASONABLE BASIS FOR</p> <p>23 HIM TO TESTIFY THAT THESE ARE WHAT THEY PURPORT TO BE.</p> <p>24 IF THEY WANT TO CROSS HIM ON PRETTY MUCH A</p> <p>25 WILD GOOSE CHASE THEORY THAT MAYBE ON ALL OF THESE</p> <p>26 SOMEONE REFILLED THEM, THEY CAN DO THAT, BUT THAT GOES</p> <p>27 TO THE WEIGHT, YOUR HONOR. I DON'T THINK THAT THEY HAVE</p> <p>28 BEEN SQUARE WITH THE COURT ABOUT WHAT DR. LONGO DID TO</p>	<p>1 MCCRONE FOUND.</p> <p>2 SO IT'S LITERALLY THERE ARE FOUR OR FIVE</p> <p>3 POINTS THAT PIN THIS TO THE GROUND AS REASONABLE AND</p> <p>4 RELIABLE INFORMATION. EVERYTHING ELSE IS CROSS BECAUSE,</p> <p>5 REMEMBER IT'S ONE THING TO SAY AUTHENTICITY. IT'S</p> <p>6 ANOTHER TO SAY WHAT IS YOUR THEORY AS TO WHY THESE ARE</p> <p>7 NOT WHAT THEY PURPORT TO BE?</p> <p>8 THE COURT: OKAY. WELL, MY INITIAL QUESTION,</p> <p>9 AND THE REASON FOR MY TENTATIVE WAS RELIABILITY ISSUES.</p> <p>10 MR. PANATIER: YES, YOUR HONOR.</p> <p>11 THE COURT: AND AUTHENTICITY ISSUES.</p> <p>12 MR. PANATIER: YES, YOUR HONOR.</p> <p>13 THE COURT: SO IT APPEARS THAT BASED UPON WHAT</p> <p>14 YOU HAVE INFORMED THE COURT, THAT THERE MAY BE A PROPER</p> <p>15 FOUNDATION LAID REGARDING WHETHER OR NOT THESE ITEMS ARE</p> <p>16 RELIABLE AND WHAT THAT OPINION IS BASED UPON AND WHETHER</p> <p>17 OR NOT THEY ARE AUTHENTIC AND WHAT THAT OPINION IS BASED</p> <p>18 ON.</p> <p>19 MR. PANATIER: YES, YOUR HONOR.</p> <p>20 THE COURT: AND SO I -- IF YOU'RE MAKING AN</p> <p>21 OFFER OF PROOF, AND OFFER TO THIS COURT THAT DR. LONGO</p> <p>22 IN A 402 WOULD TESTIFY AS TO WHAT YOU JUST INFORMED THE</p> <p>23 COURT, THIS COURT WOULD LIKELY ALLOW DR. LONGO THEN TO</p> <p>24 TESTIFY AS TO THOSE ITEMS BASED UPON THAT ADDITIONAL</p> <p>25 INFORMATION.</p> <p>26 MR. PANATIER: THANK YOU, YOUR HONOR.</p> <p>27 MR. BAILEY: QUICKLY, YOUR HONOR. JUST ON THE</p> <p>28 ARGUMENT THAT THESE TESTS PROVE THAT THESE PRODUCTS ARE</p>
Page 1704	Page 1706
<p>1 VERIFY THESE THINGS.</p> <p>2 AND THEN OF COURSE IT COMES BACK TO THE FACT</p> <p>3 THAT THEIR OWN EXPERT HAS TESTED ALL OF THEM. HE'S</p> <p>4 TESTED ALL OF THE SAME SAMPLES, AND TO DATE HE HAS ZERO</p> <p>5 EVIDENCE THAT ANY OF THESE WERE TAMPERED WITH OR</p> <p>6 CONTAMINATED OR ARE NOT WHAT THEY PURPORT TO BE.</p> <p>7 THE COURT: ALL RIGHT. BUT DR. LONGO</p> <p>8 CERTAINLY CAN'T TESTIFY TO WHAT CONDITION THEY WERE</p> <p>9 STORED IN.</p> <p>10 MR. PANATIER: NO. ALL HE'S GOT TO DO IS SAY,</p> <p>11 LOOK, BASED ON THE WORK I DID, THIS IS A REASONABLE</p> <p>12 THING TO RELY UPON AND THAT THERE WAS NO EVIDENCE THAT</p> <p>13 THERE WAS ANYTHING ELSE INSIDE. AND SO HE'S DONE THAT.</p> <p>14 AND LET'S ALSO TAKE ANOTHER STEP. FOR THE</p> <p>15 RESULTS, FOR THE POSITIVE CONTAINERS, YOUR HONOR, THEY</p> <p>16 MATCH -- WHAT JOHNSON & JOHNSON WAS FINDING FOR YEARS</p> <p>17 AND YEARS AND YEARS.</p> <p>18 THE COURT: I DIDN'T GET THAT POINT.</p> <p>19 MR. PANATIER: MY POINT IS HIS RESULTS ARE</p> <p>20 CONSISTENT WITH WHAT JOHNSON & JOHNSON FOUND INTERNALLY,</p> <p>21 AND HE'S REVIEWED ALL OF THOSE DOCUMENTS. HE'S REVIEWED</p> <p>22 EVERY ONE OF THESE DOCUMENTS. AND THE REASON HE</p> <p>23 REVIEWED THEM WAS TO SAY IS WHAT I'M FINDING, WHAT</p> <p>24 JOHNSON & JOHNSON ALREADY KNEW. AM I FINDING WHAT THEY</p> <p>25 WERE FINDING? AND THE ANSWER IS YES.</p> <p>26 HE FOUND WHAT DR. BLOUNT FOUND. HE FOLLOWED</p> <p>27 HER METHODOLOGY. HE FOUND WHAT DR. BLOUNT FOUND. HE</p> <p>28 FOUND WHAT JOHNSON & JOHNSON FOUND. HE FOUND WHAT</p>	<p>1 ALL THE SAME, ALL YOU HAVE TO DO IS KNOW WHAT HIS</p> <p>2 CONCLUSIONS ARE AS A RESULT OF HIS OWN TEST WORK.</p> <p>3 IN MRS. ANDERSON'S CASE, HE LOOKED AT TWO</p> <p>4 BOTTLES. ONE HE FOUND NOTHING IN AND ANOTHER HE FOUND</p> <p>5 ONE FIBER IN WHICH HE EXTRAPOLATES OUT TO BE 7,000</p> <p>6 FIBERS PER GRAM.</p> <p>7 NOW, IN THE PRODUCT THAT HE TESTED IN ORDER TO</p> <p>8 COME UP WITH THE NUMBERS HE WANTS TO BRING TO THIS</p> <p>9 COURTROOM FROM A PRE-1953 PRODUCT WITH NO CHAIN OF</p> <p>10 CUSTODY JUST TO ANSWER THE QUESTION ARE THESE ALL THE</p> <p>11 SAME. HE SAYS THERE'S 15 MILLION ASBESTOS FIBERS IN A</p> <p>12 GRAM OF THAT PRODUCT, AND EITHER ZERO OR ONE IN A GRAM</p> <p>13 OF A PRODUCT HE TESTED NOW.</p> <p>14 NOW, THOSE DON'T LINE UP AT ALL. I DON'T CARE</p> <p>15 WHAT KIND OF CHART YOU MAKE AS TO HOW THEY'RE</p> <p>16 DISTRIBUTED. WE'RE TALKING ABOUT TWO PRODUCTS, ONE OF</p> <p>17 WHICH WE DON'T KNOW WHERE IT'S BEEN IN 70 YEARS, WHICH</p> <p>18 HAS THEY SAY 15 MILLION FIBERS PER GRAM AND ANOTHER ONE</p> <p>19 WHICH HAS ZERO OR ONE.</p> <p>20 NOW, THAT ON ITS FACE TELLS YOU WE'RE NOT</p> <p>21 LOOKING AT THE SAME PRODUCT, AND THEY RANGE VASTLY</p> <p>22 ACROSS THE SPECTRUM, AND SO IF THERE'S A FINGERPRINT</p> <p>23 YOU'RE SUPPOSED TO SAY I CAN TELL BY LOOKING AT THIS</p> <p>24 WHETHER OR NOT THEY'RE IDENTICAL, THERE'S YOUR ANSWER.</p> <p>25 2,000 TIMES GREATER IN THE FIRST ONE HE WANTS TO USE AND</p> <p>26 IN THE ONE MRS. ANDERSON ACTUALLY USED. HE TESTED HERS,</p> <p>27 AND I HAVE NO OBJECTION TO HIM USING THOSE.</p> <p>28 THE COURT: WELL, I STILL HAVE A QUESTION FOR</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

7 (Pages 1707 to 1710)

Page 1707	Page 1709
<p>1 BOTH SIDES IN REGARDS TO THOSE, THE ONES THAT I CALLED 2 HISTORICAL SAMPLES AS TO THE RELEVANCE OF THOSE SAMPLES, 3 THE ONES THAT PREDATE THE TIME PERIOD THAT'S AT ISSUE IN 4 THIS CASE. 5 MR. PANATIER: SURE. I CAN ADDRESS THAT. SO 6 THE EVIDENCE WILL BE THAT -- REMEMBER FOR MOST OF THOSE 7 ARE ITALIAN, AND WE HAVE A WINDOW OF ITALIAN IN THIS 8 CASE OF 1980. AND SO THAT'S WHAT IS RELEVANT TO IS THAT 9 THEY ALL COME FROM THE SAME PLACE. 10 IT'S SORT OF LIKE DR. COMPTON. DR. COMPTON 11 HAD TESTED ITALIAN AND VERMONT EVEN THOUGH ITALIAN IS 12 ONLY 1980, AND WHAT DR. COMPTON TESTIFIED TO WAS THAT 13 TALC IS REPRESENTATIVE OF CURRENT AND PAST TALC 14 HORIZONS, MEANING IT'S CONSISTENT THROUGHOUT. 15 IN FACT, DR. SANCHEZ, WHO'S GOING TO TESTIFY 16 TOMORROW, SAYS IT'S ALL THE SAME. SAYS THE ORE IS ALL 17 THE SAME. 18 SO I BELIEVE THAT'S A FOUNDATIONAL ISSUE AND I 19 WILL LAY THAT FOUNDATION, YOUR HONOR, OR IT'S A CROSS 20 ISSUE. AND OF COURSE I'M GOING TO BE THE FIRST ONE TO 21 POINT OUT WITH DR. LONGO THAT, HEY, A LOT OF THESE 22 PREDATE HER ACTUAL EXPOSURE. WHY ARE THEY RELEVANT TO 23 HER? AND HE'S GOING TO SAY, WELL, FOR A BRIEF PERIOD IN 24 1980 THEY USED ITALIAN. PRIMARILY WHAT WE'RE GOING TO 25 BE FOCUSED ON IS VERMONT. 26 AND I SHOWED MR. BAILEY MY POWERPOINT. I AM 27 PRIMARILY FOCUSED ON VERMONT, BUT WE'RE GOING TO LAY A 28 FOUNDATION FOR ALL OF THIS.</p>	<p>1 JURY. ONCE AGAIN, THERE'S STILL A QUESTION AS TO HOW 2 THE JURORS WILL VALUE IT, WHETHER THEY'LL DISREGARD IT 3 IN TOTAL OR NOT. GIVE IT WHATEVER -- WHATEVER WEIGHT 4 THEY THINK IT DESERVES. 5 MR. BAILEY: I UNDERSTAND, JUDGE. BUT AS THE 6 GATEKEEPER ON CUSTODY ISSUES, YOU ARE WELL AWARE OF THE 7 RISK OF THROWING IT TO THEM TO LET THEM FIGURE OUT 8 WHETHER OR NOT THIS MEETS THE CHAIN OF CUSTODY IS JUST 9 YOUR ROLE AND NOT THEIRS, I THINK, RESPECTFULLY. 10 MR. PANATIER: AND ON THAT LAST THING, YOUR 11 HONOR, I'LL JUST SAY THIS IS A FAILURE OF COUNSEL TO 12 APPRECIATE WHERE THE DIFFERENT THINGS CAME FROM. 13 THE 1953 SAMPLE THAT HAD 15 MILLION WAS 14 ITALIAN. JOANNE ANDERSON'S IS CHINESE. SO OF COURSE 15 THERE'S GOING TO BE A DIFFERENCE, AND DR. LONGO IS GOING 16 TO LAY THAT FOUNDATION. 17 THEY'RE DIFFERENT SOURCES, SO OF COURSE 18 THERE'S DIFFERENT AMOUNTS. AND ALL OF THAT FOUNDATION 19 WILL BE LAID, YOUR HONOR. I'M GOING TO LAY MORE 20 FOUNDATION FOR DR. LONGO THAN I'VE EVER LAID. 21 THE COURT: I STILL HAVE A QUESTION REGARDING 22 WHETHER OR NOT THE COURT WILL ALLOW ANY TESTIMONY 23 REGARDING THE VINTAGE, THE HISTORICAL BABY POWDER TEST. 24 I'VE HEARD EVERYTHING YOU SAID ABOUT THAT. I'M STILL 25 TRYING TO DETERMINE IN MY MIND WHETHER OR NOT I WILL LET 26 THAT IN. 27 MR. PANATIER: YOUR HONOR, TO BE CLEAR, ARE 28 YOU TALKING ABOUT THE "PRE HER EXPOSURE" DATES?</p>
Page 1708	Page 1710
<p>1 MR. BAILEY: YOUR HONOR, AGAIN, I'M NOT GOING 2 TO BEAT A DEAD HORSE, BUT THE PROOF IS IN THE FINDINGS 3 THAT HE'S BRINGING. HE'S BRINGING A PRODUCT THAT 4 DIFFERS BETWEEN 15 MILLION FIBERS PER GRAM AND 7, WHICH 5 IS REALLY ONLY 1 TIMES WHATEVER MATH HE WANTS TO DO. 6 THAT ON ITSELF SHOWS YOU HOW UNRELIABLE THESE TESTS ARE, 7 AND THEY'RE OF PRODUCTS THAT WE DON'T EVEN KNOW WHERE 8 THEY CAME FROM OR WHERE THEY'VE BEEN. 9 YOU'VE HEARD ALREADY THE POSSIBILITY OF 10 CONTAMINATION AS A RESULT OF JUST DAY IN AND DAY OUT OF 11 EXPOSURES TO ASBESTOS IN THE AIR. MRS. ANDERSON HAD ONE 12 FIBER THAT HE FOUND IN ONE BOTTLE, AND THE OTHER ONE HE 13 FOUND ZERO. SO WE SHOULDN'T FIND OURSELVES COMPARING 14 PROBABILITIES TO A PRE-1950 OR '40 BOTTLE WITH WHAT THEY 15 SAY IS 15 MILLION FIBERS IN IT. THAT'S THE BEST PROOF 16 THAT THERE ARE AUTHENTICATION ISSUES. 17 THE COURT: WELL, AND I THINK THAT'S SOMETHING 18 THAT DEFENSE THEN WOULD CERTAINLY ARGUE AND POINT OUT, 19 AND I THINK IT'S A VALID ARGUMENT. I CERTAINLY DO. AND 20 WHAT -- WHAT IMPACT THIS TESTIMONY HAS ON THE JURY, I 21 GUESS ONLY TIME WILL TELL. BUT I CERTAINLY SEE SOME 22 ISSUES IN REGARDS TO SOME OF THE THINGS THAT YOU'VE 23 RAISED, BUT MY PROBLEM INITIALLY WAS RELIABILITY AND 24 AUTHENTICITY. AND BASED UPON WHAT MR. PANATIER HAS 25 INFORMED THIS COURT, IT LOOKS LIKE THERE WERE A NUMBER 26 OF TESTS THAT WERE DONE TO FIRM UP THE RELIABILITY ISSUE 27 AND THE AUTHENTICITY ISSUE. 28 NOW, THAT'S JUST TO PUT THE ISSUE BEFORE THE</p>	<p>1 THE COURT: CORRECT. 2 MR. PANATIER: YOUR HONOR, LET ME TALK WITH 3 COUNSEL FOR A MINUTE AND SEE IF I CAN HASH SOMETHING 4 OUT. 5 THE COURT: OKAY. 6 7 (A DISCUSSION WAS HELD OFF THE RECORD.) 8 9 MR. BAILEY: YOUR HONOR, MR. PANATIER HAS 10 OFFERED WHAT I THINK IS WHAT WE DO. YOUR HONOR, IF IT 11 BECOMES MORE COMPLICATED, WE WILL ABIDE BY YOUR RULE. 12 THE COURT: ALL RIGHT. I THINK WHAT I'LL DO 13 IS BEFORE DR. LONGO GETS TO THE POINT IN THE TRIAL WHERE 14 HE WOULD TESTIFY AS TO THE RESULTS SPECIFICALLY 15 REGARDING WHAT I CALL THE HISTORICAL OR THE VINTAGE BABY 16 POWDER, COUNSEL CAN APPROACH SIDEBAR, AND REGARDING 17 WHETHER OR NOT I BELIEVE THE PROPER FOUNDATION WAS LAID 18 AND WHETHER I THINK IT MEETS ALL OF THE CRITERIA THAT IT 19 NEEDS TO MEET. 20 MR. PANATIER: SO I DO HAVE A STOPPING POINT 21 BEFORE I GET TO THE RESULTS AND THEN WE CAN APPROACH 22 SIDEBAR. 23 THE COURT: OKAY. 24 MR. PANATIER: ALL RIGHT. 25 THE COURT: ALL RIGHT. AND JUST FOR YOUR 26 FURTHER INFORMATION, THERE WAS A REQUEST BY DEFENSE FOR 27 A 402 IN THE ALTERNATIVE. 28 MR. BAILEY: WE'LL WAIVE THAT, YOUR HONOR.</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

8 (Pages 1711 to 1714)

Page 1711	Page 1713
<p>1 WE'LL STAND ON THE ARGUMENT AND PLEADINGS. 2 THE COURT: OKAY. 3 MR. PANATIER: CAN WE BRING DR. LONGO IN? 4 THE COURT: YES. AND WE'RE GOING TO BRING IN 5 THE JURORS. 6 7 (THE JURY ENTERED THE COURTROOM.) 8 (THE FOLLOWING PROCEEDINGS WERE HELD IN 9 OPEN COURT IN THE PRESENCE OF THE JURY:) 10 11 THE COURT: EVERYONE MAY BE SEATED. ON THE 12 RECORD IN THE JOANNE ANDERSON AND GARY ANDERSON VERSUS 13 JOHNSON & JOHNSON AND JOHNSON & JOHNSON INCORPORATED. 14 FOR THE RECORD, THE JURORS AND ALTERNATE 15 JURORS ARE PRESENT. THIS IS CASE NUMBER BC666513. WE 16 HAVE PLAINTIFF COUNSEL PRESENT, MR. NIDEFFER AND 17 MR. PANATIER AND MR. GREENSTONE. WE HAVE DEFENSE 18 COUNSEL PRESENT, MR. CALFO, MR. BAILEY, MS. STEINMANN. 19 AND WE ARE READY TO PROCEED. 20 AND YESTERDAY WE ENDED WITH SOME VIDEO 21 TESTIMONY. THAT VIDEO TESTIMONY HAS NOT BEEN COMPLETED, 22 BUT WE'RE GOING TO INTERRUPT THAT VIDEO TESTIMONY AT 23 THIS POINT TO CALL A WITNESS DR. LONGO. PLAINTIFF IS 24 CALLING THIS WITNESS. SO THIS IS PART OF PLAINTIFFS' 25 CASE. 26 AS YOU RECALL, LAST WEEK I INDICATED AND 27 COUNSEL INDICATED THAT THEY WERE RESTING SUBJECT TO 28 CALLING DR. LONGO. SO BECAUSE OF SCHEDULING ISSUES,</p>	<p>1 MR. PANATIER: I THINK YOU HAVE TO SPELL YOUR 2 FIRST NAME TOO. 3 THE WITNESS: I'M SORRY. W-I-L-L-I-A-M. 4 THE COURT: THANK YOU. YOU MAY PROCEED. 5 6 WILLIAM EDWARD LONGO, 7 CALLED BY THE PLAINTIFFS, HAVING BEEN FIRST DULY SWORN, WAS 8 EXAMINED AND TESTIFIED AS FOLLOWS: 9 10 DIRECT EXAMINATION 11 BY MR. PANATIER: 12 Q SO I HAVE YOUR NAME UP THERE, DR. WILLIAM 13 LONGO. WHAT TYPE OF DOCTOR ARE YOU? 14 A I HAVE A DOCTORATE OR PH.D. IN MATERIAL 15 SCIENCE AND ENGINEERING. 16 Q OKAY. TELL US A LITTLE BIT ABOUT WHAT 17 MATERIAL SCIENCE IS. 18 A QUITE SIMPLY, IT'S THE STUDY OF MATERIALS. 19 BUT THESE MATERIALS THAT WE STUDY CAN BE BROKEN DOWN 20 INTO FIVE GROUPS: METALS, METALLURGY, POLYMERS OR 21 PLASTICS, MINERALS OR CERAMICS, COMPOSITES WHERE WE 22 MIGHT TAKE TWO OF THESE TYPES OF MATERIALS AND MIX THEM 23 TOGETHER, AND THEN BIOMATERIALS. THESE WOULD BE THINGS 24 THAT WE IMPLANT INTO THE HUMAN BODY SUCH AS A HIP 25 REPLACEMENT OR A KNEE REPLACEMENT, OR IF YOU GET 26 CATARACTS, YOU MIGHT HAVE AN INTRAOCULAR LENS WHICH IS 27 AN ARTIFICIAL LENS WHICH THEY SWAP OUT FOR, AND THAT'S 28 THE AREA THAT I MOSTLY STUDIED WHEN I WAS IN GRADUATE</p>
Page 1712	Page 1714
<p>1 THEY WERE NOT ABLE TO CALL DR. LONGO AS THEY WERE 2 CALLING ALL OF THEIR OTHER WITNESSES, SO WE ALLOWED THEM 3 TO REST, HOWEVER, GIVING THEM AN OPPORTUNITY TO CALL 4 DR. LONGO AS ONE OF THEIR WITNESSES, AND SO NOW WE'RE 5 INTERRUPTING THE DEFENSE CASE. 6 SO THIS IS A PLAINTIFF WITNESS BEING CALLED BY 7 PLAINTIFF, AND THIS -- AND THEN WE'LL PROCEED WITH THE 8 DEFENSE CASE AFTER THAT. WE'LL CONTINUE WITH THE 9 DEFENSE CASE. 10 ALL RIGHT. AND, MR. PANATIER, YOU MAY 11 PROCEED. 12 MR. PANATIER: THANK YOU, YOUR HONOR. GOOD 13 MORNING, EVERYBODY. AT THIS TIME PLAINTIFF CALLS 14 DR. WILLIAM LONGO. 15 THE COURT: AND, DR. LONGO, IF YOU WOULD COME 16 FORWARD AND STAND BY THE WITNESS STAND. AND YOU CAN 17 STOP RIGHT THERE. RAISE YOUR RIGHT HAND TO BE SWORN. 18 THE CLERK: DO YOU SOLEMNLY SWEAR THE 19 TESTIMONY YOU MAY GIVE IN THE CAUSE NOW PENDING BEFORE 20 THIS COURT SHALL BE THE TRUTH, THE WHOLE TRUTH, AND 21 NOTHING BUT THE TRUTH, SO HELP YOU GOD? 22 THE WITNESS: YES, I DO. 23 THE CLERK: THANK YOU. YOU MAY BE SEATED. 24 THE WITNESS: THANK YOU. 25 THE CLERK: PLEASE STATE AND SPELL YOUR FULL 26 NAME FOR THE RECORD, PLEASE. 27 THE WITNESS: WILLIAM EDWARD LONGO. 28 L-O-N-G-O.</p>	<p>1 SCHOOL. 2 MR. PANATIER: OKAY. LET ME GO AHEAD. WE'VE 3 PREMARKED YOUR RESUME AS PLAINTIFFS' 860. 4 5 (PLAINTIFFS' EXHIBIT 860 MARKED FOR 6 IDENTIFICATION.) 7 8 BY MR. PANATIER: 9 Q SO LET'S JUST BRIEFLY TAKE A LOOK AT YOUR 10 RESUME. THERE IT IS. 11 ALL RIGHT. IT SAYS THAT YOU WORK AT A PLACE 12 CALLED MAS, LLC. CAN YOU TELL US WHAT THAT IS? 13 A THAT'S SHORT FOR MATERIALS ANALYTICAL 14 SERVICES, BUT EVERYBODY CALLS IT MAS. IT'S A 15 LABORATORY, CONSULTING, ENGINEERING, FORENSIC 16 ENGINEERING LABORATORY. SO WE BOTH ANALYZE SAMPLES THAT 17 COME IN FROM ALL OVER THE WORLD, ASBESTOS SAMPLES, 18 INDUSTRIAL HYGIENE SAMPLES, MATERIAL SAMPLES. 19 WE ALSO DO CONSULTING FOR WHEN SOMETHING GOES 20 WRONG AND THEY ASK OUR SCIENTISTS TO TRY TO HELP THEM TO 21 DETERMINE WHAT WENT WRONG. 22 WE DO VOC, VOLATILE ORGANIC COMPOUND, TESTING 23 FOR A BUNCH OF AREAS THAT ARE INTO THIS NEW GREEN 24 LABELING. THAT NICE NEW CAR SMELL THAT WE ALL LIKE. 25 IT'S ACTUALLY VOLATILE ORGANIC COMPOUNDS BEING EMITTED 26 FROM THE PLASTICS AND THE ADHESIVES. EVEN THOUGH IT 27 SMELLS NICE, IT'S NOT THAT GOOD FOR YOU. SO WE DO A 28 WIDE RANGE OF THINGS.</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

9 (Pages 1715 to 1718)

Page 1715	Page 1717
<p>1 Q SO I'M GOING TO SWITCH BACK TO THIS POWERPOINT</p> <p>2 THAT I MADE TO HELP US GET THROUGH THIS. SO I WANT TO</p> <p>3 ASK YOU ABOUT A FEW THINGS.</p> <p>4 FIRST OF ALL, YOUR EDUCATION, DID YOU GO TO</p> <p>5 COLLEGE?</p> <p>6 A I DID.</p> <p>7 Q WHAT WAS YOUR DEGREE IN?</p> <p>8 A I GOT A BACHELOR'S OF SCIENCE IN MICROBIOLOGY,</p> <p>9 MASTERS OF SCIENCE AND ENGINEERING, AND EVENTUALLY A</p> <p>10 PH.D. OR DOCTORATE IN MATERIAL SCIENCE AND ENGINEERING.</p> <p>11 Q AND WHERE WERE THOSE FROM?</p> <p>12 A ALL FROM THE UNIVERSITY OF FLORIDA.</p> <p>13 Q WHERE DO YOU CURRENTLY LIVE, BY THE WAY?</p> <p>14 A I LIVE IN CUMMINGS, GEORGIA, WHICH IS ONE OF</p> <p>15 THE MANY SUBURBS OF ATLANTA.</p> <p>16 Q LET'S TALK A LITTLE BIT ABOUT THIS. EPA</p> <p>17 PEER-REVIEW GROUP FOR ASBESTOS ENGINEERING PROGRAM.</p> <p>18 WHAT IS THAT?</p> <p>19 A FOR A WHILE THE ENVIRONMENTAL PROTECTION</p> <p>20 AGENCY INVITED FOUR SCIENTISTS, THREE FROM THIS COUNTRY</p> <p>21 AND ONE FROM CANADA, TO COME INTO THEIR HEADQUARTERS IN</p> <p>22 CINCINNATI TO LOOK OVER THEIR RESEARCH IN ASBESTOS</p> <p>23 ISSUES. SO WE WOULD LOOK AT WHAT THEY'RE DOING. THEY</p> <p>24 WOULD CONTRACT OUT TO OTHER LABORATORIES FOR TESTING.</p> <p>25 WE WOULD LOOK OVER THAT TESTING. THEN WE WOULD MAKE</p> <p>26 SUGGESTIONS ON WHERE THEY SHOULD FOCUS THEIR ENERGY AND</p> <p>27 RESEARCH IN ASBESTOS ISSUES. AND I DID THAT FOR SEVEN,</p> <p>28 EIGHT YEARS.</p>	<p>1 A YES.</p> <p>2 Q ALL RIGHT. IT ALSO SAYS ASTM UP THERE. WE</p> <p>3 HEARD DR. COMPTON. HE TOLD US A LITTLE BIT ABOUT ASTM.</p> <p>4 WHAT IS YOUR INVOLVEMENT WITH ASTM?</p> <p>5 A I'M A MEMBER OF THEIR D2205 COMMITTEE, WHICH</p> <p>6 SPECIFICALLY IS IN CHARGE OF DEVELOPING PROTOCOLS OR</p> <p>7 RECIPES FOR MEASURING ASBESTOS IN ALL TYPES OF THINGS.</p> <p>8 MY INVOLVEMENT WAS THAT I WROTE ONE OF THEIR</p> <p>9 METHODS, AND YOU WRITE IT, BUT THEN YOU PUT IT THROUGH</p> <p>10 THE COMMITTEE, AND PEOPLE EITHER SAY YES, THIS IS GOOD,</p> <p>11 OR TAKE SHOTS AT IT AND HOW TO IMPROVE IT. THAT WAS A</p> <p>12 PARTICULAR CONTENTIOUS ONE. I THINK IT TOOK ME -- TOOK</p> <p>13 THE COMMITTEE SIX YEARS FROM START TO FINISH TO GET THAT</p> <p>14 OUT.</p> <p>15 Q WERE THERE PEOPLE WHO WERE AGAINST THE METHODS</p> <p>16 THAT YOU WERE PROPOSING?</p> <p>17 A WELL, THERE WAS PEOPLE WHO WERE AGAINST THE</p> <p>18 METHOD THAT THE COMMITTEE PROPOSED, AND THEN THERE WAS A</p> <p>19 WIDE RANGE OF PEOPLE THAT WERE FOR IT.</p> <p>20 Q OKAY. SO IS THAT -- UNDER STANDARDS</p> <p>21 AUTHORSHIP, IT SAYS "ASTM SETTLED DUST FIBER COUNT</p> <p>22 METHOD D5755." IS THAT THE METHOD YOU'RE TALKING ABOUT?</p> <p>23 A YES.</p> <p>24 Q AND SO IT GETS VOTED IN, IS THAT WHAT HAPPENS?</p> <p>25 A WELL, IN THE COMMITTEE THERE'S 125 MEMBERS.</p> <p>26 THE WORKING COMMITTEE USUALLY HAS 25 TO 30. SO EVERY</p> <p>27 SIX MONTHS WE HAVE A MEETING AND YOU SEND OUT THE -- YOU</p> <p>28 SEND OUT THE DRAFT. EVERYBODY LOOKS AT IT. AND THEY</p>
Page 1716	Page 1718
<p>1 Q AND THEN THERE'S ANOTHER ORGANIZATION THERE,</p> <p>2 THE AIHA, AND I PUT THE LOGO OVER THERE. WHAT IS THAT?</p> <p>3 A THAT'S THE AMERICAN INDUSTRIAL HYGIENE</p> <p>4 ASSOCIATION. THAT'S A GROUP OF -- THEIR MEMBERSHIP</p> <p>5 INVOLVES GROUPS OF BOTH INDUSTRIAL HYGIENISTS, CERTIFIED</p> <p>6 INDUSTRIAL HYGIENISTS OR ANY INDIVIDUALS THAT ARE</p> <p>7 INTERESTED IN HOW TO MEASURE AND MAKE WORKPLACES SAFE.</p> <p>8 Q OKAY. IS SOMETHING THAT THEY DO TO EVALUATE</p> <p>9 WHETHER OR NOT PEOPLE ARE BEING EXPOSED TO CERTAIN</p> <p>10 THINGS?</p> <p>11 A YES. A WHOLE RANGE OF THINGS. YOU COULD</p> <p>12 EVALUATE IF THEY'RE BEING EXPOSED TO, SAY, TOXIC</p> <p>13 PARTICULATES OR ORGANIC FUMES OR RADIATION OR THE</p> <p>14 LIGHTING IS NOT RIGHT OR SOUND OR -- IT'S JUST A MYRIAD.</p> <p>15 IF YOU'RE IN A FACTORY AND YOU'RE DOING A TYPE OF MOTION</p> <p>16 THAT'S CAUSING ELBOW PROBLEMS, THEY TRY TO WORK AND FIX</p> <p>17 AND MAKE MANUFACTURING FACILITIES SAFER.</p> <p>18 Q OKAY. AND HAVE YOU ACTUALLY ASSESSED</p> <p>19 INDIVIDUALS' POTENTIAL EXPOSURE TO ASBESTOS IN AN</p> <p>20 INDUSTRIAL HYGIENE SETTING?</p> <p>21 A YES.</p> <p>22 Q OKAY. HOW MANY TIMES HAVE YOU DONE THAT?</p> <p>23 A ME PERSONALLY, A NUMBER OF TIMES, AND THEN WE</p> <p>24 HAVE INDUSTRIAL HYGIENISTS AS WELL AS CERTIFIED</p> <p>25 INDUSTRIAL HYGIENISTS THAT WORK FOR MAS, AND THEY'VE</p> <p>26 DONE THAT A NUMBER OF TIMES.</p> <p>27 Q HAVE YOU PUBLISHED ON THE POTENTIAL FOR</p> <p>28 EXPOSURE FROM ASBESTOS-CONTAINING PRODUCTS?</p>	<p>1 EITHER GO YES, NOT GOING TO VOTE, OR NO. AND IF THEY</p> <p>2 SAY NO, THEN THEY WRITE THE REASONS, AND ONE NOTE CAN</p> <p>3 KICK IT BACK TO THE COMMITTEE.</p> <p>4 Q OKAY. YOURS ULTIMATELY WAS ADOPTED; IS THAT</p> <p>5 FAIR?</p> <p>6 A YES. AFTER SIX YEARS.</p> <p>7 Q WELL, WHO WAS -- WHO WAS PUSHING AGAINST IT?</p> <p>8 MR. BAILEY: OBJECTION, YOUR HONOR. CALLS FOR</p> <p>9 HEARSAY AND IT'S NOT RELEVANT.</p> <p>10 THE COURT: SUSTAINED.</p> <p>11 BY MR. PANATIER:</p> <p>12 Q WHO'S R. J. LEE?</p> <p>13 A RICH LEE IS THE PRESIDENT OF THE R. J. LEE</p> <p>14 GROUP.</p> <p>15 Q OKAY. AND WHO'S MATTHEW SANCHEZ?</p> <p>16 A HE IS A MINERALOGIST THAT WORKS FOR R. J. LEE.</p> <p>17 Q WE'LL TALK A LITTLE BIT ABOUT R. J. LEE LATER.</p> <p>18 LET'S GO BACK UP TO CONSULTED FOR THE CDC, THE</p> <p>19 CENTERS FOR DISEASE CONTROL. HAVE YOU CONSULTED FOR</p> <p>20 THEM?</p> <p>21 A YES.</p> <p>22 Q NATIONAL INSTITUTES OF HEALTH?</p> <p>23 A YES.</p> <p>24 Q CITY OF NEW YORK?</p> <p>25 A YES, WE HAVE.</p> <p>26 Q NASA?</p> <p>27 A WE HAVE.</p> <p>28 Q ANYTHING YOU CAN TALK ABOUT?</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

10 (Pages 1719 to 1722)

Page 1719	Page 1721
<p>1 A WELL, YES. FOR NASA WE WERE ASKED TO -- THEY 2 WERE LAUNCHING AN X-RAY TELESCOPE, AND THEY HAD A 3 PARTICULAR TYPE OF SEMICONDUCTOR BOARD THAT THEY NEEDED 4 10 MICROMETER HOLES DRILLED IN IN CERTAIN SEQUENCE. 5 Q 10 MICROMETERS. MICRONS? 6 A YES. 7 Q OKAY. 8 A AND WE HAD WHAT'S CALLED A FOCUS ION BEAM 9 INSTRUMENT UP IN OUR RALEIGH LABORATORY THAT USES VERY 10 HEAVY IONS, AND YOU CAN ACTUALLY DRILL THROUGH THINGS, 11 AND YOU CAN ACTUALLY MAKE JUMPERS ON SEMICONDUCTOR 12 BOARDS. SAY YOU HAVE A BAD SECTION OF A BOARD AND YOU 13 WANT TO WIRE AROUND IT. WELL, EITHER YOU GET SOMEBODY 14 REALLY, REALLY SMALL ON THE MICROSCOPIC LEVEL OR YOU 15 COME TO US AT THAT TIME AND WE COULD CUT OUT WHERE THE 16 BAD CIRCUIT WAS AND THEN WE COULD LAY PLATINUM WIRE JUST 17 LIKE YOU'RE MAKING A JUMPER. WE WERE ONE OF THE FEW 18 THAT COULD DO THAT BACK IN THE 1990S. 19 Q OKAY. YOU'VE ALSO WORKED FOR DOW? 20 A YES. 21 Q AND THE AIR FORCE? 22 A YES. THE AIR FORCE ONE I CAN'T TALK ABOUT. 23 Q OKAY. I WON'T ASK YOU ABOUT THAT ONE THEN. 24 SO YOU'RE TESTIFYING TODAY. I'VE ASKED YOU TO 25 COME TESTIFY IN COURT. YOU UNDERSTAND I REPRESENT THE 26 PLAINTIFFS IN THIS CASE; FAIR? 27 A YES, SIR. 28 Q YOU HAVE TESTIFIED IN COURTS BEFORE; RIGHT?</p>	<p>1 Q AND I'M JUST GOING TO ASK YOU: DID YOU DO 2 SOME TESTING OF JOHNSON'S BABY POWDER IN PREPARATION FOR 3 THIS AND OTHER CASES? 4 A YES, SIR. 5 Q OKAY. AND WAS YOUR LAB CERTIFIED WHEN YOU DID 6 IT? 7 A IT WAS. 8 Q IT SAYS "CERTIFIED BY THE AIHA." IS THAT THE 9 SAME AIHA AS WE TALKED ABOUT EARLIER? 10 A YES. THE AMERICAN INDUSTRIAL HYGIENE 11 ASSOCIATION. WE ARE CERTIFIED BY THEM TO DO ASBESTOS 12 ANALYSIS BY OPTICAL MICROSCOPY, BY TRANSMISSION ELECTRON 13 MICROSCOPY, BY POLARIZED LIGHT MICROSCOPY. ALL TYPES OF 14 ORGANICS AND METALS DOWN TO PARTS PER BILLION AND MOLD 15 SPORES. 16 Q MOLD SPORES? 17 A MOLD SPORE SAMPLES WHERE IF YOU THINK YOU HAVE 18 A MOLD CONTAMINATION, THEY'LL TAKE AN AIR SAMPLE AND WE 19 CAN TELL YOU WHICH MOLD IT IS, WHICH SPORES, HOW MANY, 20 AND WHAT YOU NEED TO DO. 21 Q HAVE YOU ANALYZED SAMPLES OF THE MATERIAL AS 22 WELL AS SAMPLES OF PARTICULATE AND THINGS THAT HAVE COME 23 OUT OF AIR SAMPLES? 24 A YES. 25 Q IT ALSO SAYS NVLAP OR NVLAP. WHAT 26 CERTIFICATION IS THAT? 27 A THAT'S THE NATIONAL VOLUNTEER LABORATORY 28 ACCREDITATION PROGRAM. THAT'S RUN ESSENTIALLY BY THE</p>
Page 1720	Page 1722
<p>1 A YES, SIR, I HAVE. 2 Q MANY TIMES? 3 A YES. 4 Q HAVE YOU ALSO WORKED FOR OR TESTIFIED FOR 5 DEFENDANTS IN ASBESTOS LITIGATION? 6 A I HAVE. 7 Q OKAY. IN FAIRNESS, MOST OF IT IS FOR 8 PLAINTIFFS; IS THAT RIGHT? 9 A MOST OF THE TIME WHEN IT COMES TO THIS STAGE, 10 IT'S FOR PLAINTIFFS. 11 Q OKAY. HAVE YOU CONSULTED MANY, MANY TIMES 12 WITH DEFENDANTS IN ASBESTOS LITIGATION? 13 A I HAVE. 14 Q WHAT'S YOUR RATE THAT YOU CHARGE PER HOUR? 15 A \$550 AN HOUR. 16 Q NOW, HOW LONG HAVE YOU BEEN DOING THIS TYPE OF 17 WORK, THE TESTING WORK AND THEN GETTING INTO ACTUALLY 18 COMING AND TELLING JURIES ABOUT WHAT YOU FOUND? 19 A LET'S SEE. MAS JUST HAD ITS 30-YEAR 20 ANNIVERSARY, AND IT'S PROBABLY ONE OR TWO YEARS AFTER 21 MAS STARTED THAT I STARTED TESTIFYING. SO 28 YEARS. 22 Q AND OVER THAT TIME, HAVE YOU MADE INTO THE 23 MILLIONS DOING TESTIMONY AND SO FORTH? 24 A OUR LABORATORY HAS BILLED IN THE MILLIONS OVER 25 THAT TIME. 26 Q OKAY. I DID WANT TO ASK YOU UNDER LABORATORY 27 CERTIFICATION, IS YOUR LABORATORY CERTIFIED? 28 A IT IS.</p>	<p>1 FEDERAL GOVERNMENT OR THE ENVIRONMENTAL PROTECTION 2 AGENCY. THAT CERTIFIES YOU AGAIN FOR US TO DO 3 TRANSMISSION ELECTRON MICROSCOPY ANALYSIS, AIR SAMPLES 4 FOR ASBESTOS, AS WELL AS BULK SAMPLES FOR ASBESTOS. 5 Q AND THEN IT ALSO SAYS FDA COMPLIANT. WHAT 6 DOES THAT MEAN? 7 A WE'RE AN FDA REGISTERED LABORATORY. SO WE CAN 8 RECEIVE ANY TYPE OF -- FROM SCHEDULE 2 TO SCHEDULE 3, 9 SCHEDULE 4 ANTIBIOTICS. SO OUR LABORATORY IS REGISTERED 10 AND AUDITED BY THE FDA TO DO WORK IN THE PHARMACEUTICAL 11 INDUSTRY. 12 WE ALSO HAVE OUR DEA LICENSE SO THAT WE CAN 13 RECEIVE THESE MATERIALS AND EVERYTHING FROM -- SAY YOU 14 HAVE STREPTOMYCIN ANTIBIOTICS AND IT'S 15 PERCENT ACTIVE 15 AGENT, MEANING 15 PERCENT OF THE PILL IS SUPPOSED TO BE 16 STREPTOMYCIN, SO WE CAN VALIDATE THAT. 17 HOW LONG CAN YOU STORE A TYPICAL TYPE OF DRUG 18 BEFORE IT MEETS ITS SHELF LIFE WHERE IT LITERALLY WILL 19 SIT IN A PARTICULAR AREA OF THE LIGHTS ON, LIGHTS OFF? 20 ALL KINDS OF INTERESTING THINGS. 21 Q YEAH, BECAUSE I ALWAYS WONDER WHEN YOU TAKE A 22 PILL, HOW DO YOU KNOW WHAT'S IN THERE IS VITAMIN C. SO 23 YOU GUYS CAN TEST THAT? 24 A WE CAN TEST IT, AND THEY HAVE TO AUDIT IT. 25 AND THE FDA AUDITS ARE THE MOST INTENSE. YOU LITERALLY 26 GET A CALL FROM THE OFFICE AND SAY THERE'S TWO FDA 27 AGENTS HERE FOR YOUR AUDIT. 28 Q OKAY. AND THEN THE LAST ENTRY, IT SAYS</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

11 (Pages 1723 to 1726)

Page 1723	Page 1725
<p>1 "ASBESTOS PRODUCT TESTING, 300 TO 400,000 ANALYSES 2 CONDUCTED OVER 30 YEARS." 3 IS THAT YOU AND PEOPLE UNDER YOUR SUPERVISION 4 CONDUCTING ANALYSIS FOR ASBESTOS? 5 A YES, IT'S JUST NOT ME. WE HAVE A 20,000 6 SQUARE FOOT LABORATORY, 38 EMPLOYEES. WE HAVE OTHER 7 MATERIAL SCIENTISTS LIKE MYSELF. WE HAVE ORGANIC 8 CHEMISTS. WE HAVE ANORGANIC CHEMISTS. WE HAVE 9 GEOLOGISTS, CERTIFIED INDUSTRIAL HYGIENISTS, INDUSTRIAL 10 HYGIENISTS, MICROSCOPISTS, OPTICAL MICROSCOPISTS, TEM, 11 OR TRANSMISSION ELECTRON MICROSCOPY MICROSCOPISTS. I'M 12 TRYING TO THINK OF WHAT ELSE. BIOLOGISTS, 13 MICROBIOLOGIST. I DON'T WANT TO LEAVE THEM OUT. 14 Q OKAY. LET ME RUN BACK TO YOUR RESUME. UNDER 15 PUBLICATIONS AND PRESENTATIONS, HAVE YOU PUBLISHED AND 16 PRESENTED ON THE THINGS THAT YOU HAVE STUDIED? 17 A YES, SIR, I HAVE. 18 Q DOES THAT RUN THE GAMUT FROM THINGS LIKE THE 19 FUMES THAT YOU'VE TESTED AS WELL AS ASBESTOS? 20 A YES. EVERYTHING FROM WELDING FUMES TO 21 VOLATILE ORGANIC COMPOUNDS TO ASBESTOS TO DEVELOPMENT OF 22 A CANCER DRUG DELIVERY SYSTEM WHEN I WAS IN GRADUATE 23 SCHOOL. JUST A WIDE RANGE OF THINGS INVOLVING SOME SORT 24 OF MICRO-TYPE PARTICULATE OR MICROANALYSIS. 25 Q AND HAVE ANY OF YOUR PUBLICATIONS BEEN IN THE 26 PEER-REVIEWED LITERATURE? 27 A YES, SIR, IT HAS. 28 Q OKAY. HAVE YOU PUBLISHED ON FINDINGS OF</p>	<p>1 Q AND YOU SAID THE JOURNAL OF CANCER? 2 A JOURNAL OF CANCER IN 1995. 3 Q OKAY. SO LET'S CHAT A LITTLE BIT ABOUT 4 MICROSCOPY. WE'VE HEARD ABOUT IT. AND I WANT TO -- I'M 5 GOING TO ASK YOU SOME ABOUT THAT. 6 FIRST OF ALL, WHEN I ASK YOU A SCIENTIFIC 7 QUESTION FOR A CONCLUSION, WILL YOU KEEP IT TO A 8 REASONABLE DEGREE OF SCIENTIFIC CERTAINTY? 9 A YES, SIR, I WILL. 10 Q BY THE WAY, LET ME JUST ASK YOU SINCE I ASKED 11 IT ABOUT THE CIGARETTES. HAS THERE ACTUALLY BEEN 12 PUBLISHED LITERATURE WHERE INDIVIDUALS HAVE PUBLISHED IN 13 THE PEER-REVIEWED LITERATURE THE ANALYSIS OF VINTAGE 14 TALC PRODUCTS THAT GO BACK DECADES AND DECADES? 15 A YES, SIR. 16 Q WHO'S DONE THAT? 17 A WELL, GORDON DID THAT AS WELL AS PIERCE, ET 18 AL. 19 Q OKAY. PIERCE, AND WHEN DID THAT COME OUT? 20 A I THINK LAST YEAR. TOWARDS THE END OF LAST 21 YEAR, IF I'M NOT MISTAKEN. 22 Q DID THEY -- IN THE PIERCE ARTICLE THAT WAS 23 PUBLISHED IN THE PEER REVIEW, OR IN THE GORDON ARTICLE 24 DID THEY HAVE A RECORD OR A CHAIN OF CUSTODY GOING ALL 25 THE WAY BACK UNTIL WHEN THAT BOTTLE WAS PURCHASED OFF 26 THE SHELF? 27 A NO. 28 Q BASED ON WHAT WAS PUBLISHED IN THOSE ARTICLES,</p>
Page 1724	Page 1726
<p>1 ASBESTOS THAT YOU HAVE USED TEM OR TRANSMISSION ELECTRON 2 MICROSCOPY FOR? 3 A YES. ONE OF THE FIRST BIG ONES WAS THE 4 PUBLICATION IN THE JOURNAL OF CANCER WITH OUR KENT 5 MICRONITE CIGARETTE STUDIES. 6 Q OKAY. SO LET ME ASK YOU ABOUT THAT. YOU SAID 7 KENT MICRONITE CIGARETTE STUDIES. WAS THERE A CIGARETTE 8 AT SOME POINT IN TIME THAT ACTUALLY PUT ASBESTOS IN THE 9 FILTERS? 10 A SADLY, YES. IT WAS FROM 1951 TO APPROXIMATELY 11 1955, AND IT WAS SOLD BY LORILLARD OR KENT CIGARETTES. 12 IT WAS THEIR FIRST FILTERED PRODUCT, AND BESIDES -- THEY 13 USUALLY USED METHYL CELLULOSE FIBERS. THEY PACKED IT 14 WITH CROCIDOLITE ASBESTOS. 15 Q SO LET ME JUST WALK INTO THIS JUST FOR A 16 MINUTE, WHICH IS JUST -- YOU SAID THOSE CIGARETTES WERE 17 FROM THE '50S? 18 A '51 TO '56. 19 Q DID YOU OBTAIN VINTAGE CIGARETTES AND THEN 20 TEST THOSE? 21 A YES. 22 Q AND WERE YOU ABLE TO RELIABLY ESTABLISH THAT 23 THEY WOULD HAVE RELEASED ASBESTOS IN THE SAME WAY AS 24 THEY WOULD HAVE IN THE 1950S? 25 A YES. 26 Q AND WAS THAT PUBLISHED IN THE PEER-REVIEWED 27 LITERATURE? 28 A YES, SIR.</p>	<p>1 WITHOUT QUOTING FROM THEM BECAUSE WE CAN'T DO THAT, BUT 2 WITHOUT QUOTING FROM THEM, WERE THOSE BOTTLES 3 SUFFICIENTLY RELIABLE FOR THOSE SCIENTISTS TO DRAW 4 CONCLUSIONS ABOUT WHAT WAS IN THEM? 5 MR. BAILEY: OBJECTION, YOUR HONOR. CALLS FOR 6 SPECULATION. 7 THE COURT: LET ME HAVE THE QUESTION READ 8 BACK, PLEASE. 9 (RECORD READ.) 10 MR. BAILEY: OBJECTION, YOUR HONOR. CALLS FOR 11 SPECULATION AND HEARSAY. I MEAN, RELEVANCE. I'M SORRY 12 THE COURT: I'M GOING TO SUSTAIN THE 13 OBJECTION. I THINK YOU CAN REPHRASE IT. 14 MR. PANATIER: SURE. I'LL REPHRASE IT, YOUR 15 HONOR. 16 BY MR. PANATIER: 17 Q DID THOSE RESEARCHERS ACTUALLY STUDY WHAT WAS 18 IN THE BOTTLES? 19 A YES. 20 Q AND BY THE WAY, WERE THESE SAMPLES OF COSMETIC 21 TALC THAT THEY WERE STUDYING? 22 A YES. 23 Q DID THOSE RESEARCHERS, BASED ON HISTORICAL 24 BOTTLES, DRAW CONCLUSIONS AS TO WHAT WAS FOUND IN THE 25 BOTTLES? 26 A YES. 27 Q OKAY. ALL RIGHT. SO LET'S TALK A LITTLE BIT 28 ABOUT MICROSCOPY. OH, AND BY THE WAY, IS LOOKING AT AND</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

12 (Pages 1727 to 1730)

Page 1727	Page 1729
<p>1 RELYING UPON VINTAGE HISTORICAL SAMPLES SOMETHING YOU 2 HAVE DONE THROUGHOUT YOUR CAREER? 3 A YES. 4 Q IS THAT SOMETHING YOU DID JUST LIKE PIERCE AND 5 GORDON, THESE OTHERS, FOR THE JOHNSON & JOHNSON SAMPLES? 6 MR. BAILEY: OBJECTION. LEADING, YOUR HONOR. 7 THE COURT: SUSTAINED. 8 BY MR. PANATIER: 9 Q OKAY. WE'RE GOING TO GET MORE INTO THE 10 JOHNSON & JOHNSON SAMPLES, BUT GENERALLY GIVE US THE 11 GENERAL CATEGORIES OF SAMPLES YOU HAD WHEN YOU TESTED 12 THEM AS FAR AS WHERE THEY CAME FROM. 13 MR. BAILEY: EXCUSE ME, YOUR HONOR. I THINK 14 THAT'S ALREADY SUBJECT OF A MOTION. I THOUGHT WE WERE 15 GOING TO APPROACH THE BENCH FOR. 16 MR. PANATIER: THIS IS TO LAY A FOUNDATION. 17 THE COURT: OKAY. APPROACH SIDEBAR. 18 MR. PANATIER: YOUR HONOR, I'LL DO THIS AND 19 THEN I'LL GET BACK TO THAT. 20 THE COURT: ALL RIGHT. LET'S PROCEED. 21 BY MR. PANATIER: 22 Q ALL RIGHT. I'M JUMPING AHEAD AND I DO THAT. 23 LET'S TALK ABOUT TRANSMISSION ELECTRON 24 MICROSCOPY. 25 A OKAY. 26 Q HOW LONG HAVE YOU BEEN DOING THAT? 27 A SINCE 1983. 1984. 28 Q ALL RIGHT. AND UP HERE WE HAVE THIS TABLE,</p>	<p>1 PICK-UP STICKS. IF YOU HAVE AT LEAST THREE FIBERS 2 INTERSECTING LIKE THIS, YOU CALL IT A CLUSTER. THE 3 BUNDLE, YOU HAVE TO HAVE AT LEAST THREE FIBERS TOUCHING 4 TO CALL IT A BUNDLE. 5 Q SO WHAT DO YOU CALL IT IF YOU ONLY HAVE TWO 6 FIBERS TOUCHING? 7 A YOU SHOULD CALL IT A SINGLE FIBER. IF YOU 8 LOOK, IF YOU LOOK AT IT AND SEE THERE'S ONE OTHER. THAT 9 DOESN'T HAPPEN TOO OFTEN BUT EVERY NOW AND THEN. 10 Q OKAY. SO WHAT'S THIS A PICTURE OF? 11 A THIS IS OUR NEW SCANNING ELECTRON -- SCANNING 12 ELECTRON MICROSCOPE. IT'S A NEW STATE OF THE ART FIELD 13 EMISSION SCANNING ELECTRON MICROSCOPE IN OUR LABORATORY. 14 Q WHAT'S THE DIFFERENCE BETWEEN SCANNING 15 ELECTRON MICROSCOPE AND TRANSMISSION ELECTRON 16 MICROSCOPE? 17 A IN TRANSMISSION ELECTRON MICROSCOPE THE SAMPLE 18 GOES IN THE MIDDLE OF THE MICROSCOPE. SO YOU HAVE AN 19 ELECTRON BEAM COMING DOWN. SAY THIS IS ONE FIBER. 20 ELECTRONS ARE POINTED INTO A BEAM, HITS THE FIBER. 21 DEPENDING ON THE SIZE OF THE FIBER OR HOW THICK IT IS, 22 SOME ELECTRONS WILL GO THROUGH; SOME WON'T. SO YOU GET 23 CONTRAST DIFFERENCE. 24 THINK OF AN X-RAY. YOU STICK YOUR HAND OUT 25 THERE. THEY'RE ACTUALLY PHOTOGRAPHING UNDERNEATH. THE 26 DENSE BONE IS LIGHTER AND AROUND THE TISSUE IS DARKER. 27 IT'S GOT A CONTRAST IN. 28 THE TRANSMISSION ELECTRON MICROSCOPE, YOU</p>
Page 1728	Page 1730
<p>1 AND YOU AND I HAVE LOOKED AT THIS BEFORE. SINGLE 2 FIBERS, FIBER BUNDLES, AND CLUSTERS. 3 A YES. 4 Q WHAT SIGNIFICANCE DO THOSE LABELS HAVE? 5 A WELL, IF YOU GO TO THE SINGLE FIBER, YOU CAN 6 SEE ONE STRUCTURE. IT HAS PARALLEL SIDES, AND YOU DON'T 7 SEE ANY OTHER ADDITIONAL FIBERS ATTACHED TO IT. 8 THESE ARE THE COUNTING RULES OR THE PROTOCOLS 9 WHEN WE DO TRANSMISSION ELECTRON MICROSCOPY. 10 THE SECOND ONE IS A BUNDLE, AND IF YOU LOOK AT 11 THE ENDS, YOU CAN SEE THAT THIS HAS PARALLEL SIDES, BUT 12 IT'S STEPPED BECAUSE YOU HAVE NUMBERS OF FIBERS, AND IF 13 YOU LOOK CLOSE, YOU CAN SEE INDIVIDUAL FIBERS. 14 THIS COUNTING PROTOCOL FOR FIBERS WAS 15 DEVELOPED AND ACCEPTED SOME YEARS AGO WHEN THEY WERE 16 TRYING TO GET CONSISTENCY THROUGHOUT ALL THE 17 LABORATORIES. WE CAN ALL AGREE THAT IT'S ONE BUNDLE. 18 NOBODY IN THE LABORATORIES FROM ALL THE DIFFERENT 19 LABORATORIES COULD EVER AGREE HOW MANY FIBERS IN THERE. 20 JUST LOOKING AT THAT BUNDLE AND DOING THIS FOR SO LONG, 21 I WOULD ESTIMATE SOMEWHERE BETWEEN 20 TO 50 INDIVIDUAL 22 FIBERS. 23 Q BUT YOU SAID UNDER THE COUNTING PROTOCOL, IN 24 ORDER TO TRY TO GET ALL THE LABS ON THE SAME PAGE, THEY 25 WOULD SAY THAT'S ONE BUNDLE? 26 A ONE STRUCTURE, ONE BUNDLE. THAT'S ALL YOU CAN 27 CALL IT. 28 AND THEN THE LAST ONE IS LIKE WHAT I CALL</p>	<p>1 CAN'T SEE THINGS VERY THICK, BECAUSE IF YOU HAVE TOO 2 MUCH ON IT, IT'S JUST DARK. 3 THE SCANNING ELECTRON MICROSCOPE, AS THE NAME 4 IMPLIES, TAKES THAT ELECTRON BEAM AND SCANS IT ACROSS 5 YOUR SAMPLES REAL FAST LIKE A TV USED TO DO IN THE OLD 6 DAYS. AND WHILE IT'S SCANNING THAT SAMPLE, AREAS THAT 7 STICK OUT A LOT ARE EJECTING ELECTRONS BECAUSE THE 8 POWER. THOSE ELECTRONS ARE THEN CAPTURED IN THE 9 MICROSCOPE, WHICH IS BEYOND MY PAY GRADE THROUGH ALL THE 10 ELECTRONICS HOW IT DOES IT, RECREATES THAT SAMPLES. THE 11 MORE ELECTRONS, THE SAMPLE IS LIGHTER. THE LESS 12 ELECTRONS, IT'S DARKER. 13 IT'S REALLY GOOD FOR SURFACE FEATURES. IF 14 YOU'VE GOT VERY SMALL CRACKS OR YOU WANT TO SEE THE 15 CURVATURE OF A FIBER, SO IT'S A VERY IMPORTANT TOOL IN 16 MATERIAL SCIENCE. 17 Q OKAY. AND THEN HERE'S ANOTHER TEM. DO YOU 18 GUYS HAVE MORE THAN ONE TEM THERE AT MAS? 19 A WE HAVE FOUR. IF YOU LOOK AT THE MIDDLE OF 20 THAT TALL COLUMN, THAT'S WHERE THE SAMPLE GOES IN. 21 Q THAT SILVER THING THERE? 22 A RIGHT THERE. SO UP AT THE TOP IS THAT CABLE 23 COMING IN THE TOP IS THE VOLTAGE. THESE MICROSCOPES RUN 24 OUT ABOUT 120,000 VOLTS. GOT A LITTLE FILAMENT IN 25 THERE, AND ALL OF THAT VOLTAGE CAUSES ELECTRONS TO SPEW 26 OUT. 27 THEN THE LENSES IN THIS THING ARE ALL 28 ELECTROMAGNETIC. SO THE ELECTRONS HEAD DOWN THE COLUMN,</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

13 (Pages 1731 to 1734)

Page 1731	Page 1733
<p>1 AND THE ELECTROMAGNETIC LENSES START GETTING INTO A FINE 2 POINT. 3 AND IT GOES THROUGH THE SAMPLE, AND THEN THE 4 LENSES DO THE OPPOSITE, START SPREADING IT OUT. AND 5 WHERE WE HAVE THAT LITTLE COVER THERE IS WHERE THE 6 ANALYST LOOKS BECAUSE IT'S A FLORESCENT SCREEN. YOU SEE 7 THE TWO KNOBS ON EACH SIDE. THAT'S HOW HE TURNS IT. 8 SO THAT MICROSCOPE WEIGHS MAYBE 10,000 POUNDS. 9 YOU HAVE TO HAVE A VACUUM BECAUSE ELECTRONS AREN'T VERY 10 STRONG. IF YOU HAVE AIR MOLECULES IN THERE, IT WILL HIT 11 IT AND NOT GO ANYWHERE. AND THE SAMPLES THAT YOU CAN 12 LOOK AT CAN ONLY FIT ON A 3-MILLIMETER GRID. 13 Q OKAY. SO THEY'RE VERY SMALL SAMPLES? 14 A CORRECT. 15 Q HOW MUCH DOES A MICROSCOPE LIKE THAT COST? 16 A WE JUST HAD A NEW STATE OF THE ART ONE COME 17 IN. I THINK EVERYTHING ON IT IS ABOUT \$700,000. 18 Q IS THAT IT? IS THAT THE NEW ONE? 19 A NO, IT REPLACES THAT ONE. THAT WAS OUR 200KV, 20 200,000-VOLT RESOLUTION. IT GOT RETIRED FOR A BRAND-NEW 21 ONE. 22 Q OKAY. 23 A ALL RIGHT. 24 Q SO LET'S TALK ABOUT YOUR METHODOLOGIES. YOU 25 ANALYZED JOHNSON'S BABY POWDER; IS THAT RIGHT? 26 A THAT'S RIGHT. 27 Q BEFORE WE TALK ABOUT THE RESULTS AND ALL OF 28 THAT, LET'S TALK ABOUT THE METHODOLOGIES. HAVE YOU BEEN</p>	<p>1 DROP INSTEAD OF MOST OF THE CUP. 2 WHAT'S CHALLENGING, BECAUSE YOU'RE IN THE 3 ELECTRON MICROSCOPE, IF YOU GET TALC PARTICLES ON TOP OF 4 EACH OTHER, YOU CAN'T SEE ANYTHING BECAUSE THE ELECTRON 5 BEAM CAME THROUGH. SO YOU HAVE TO REDUCE THE AMOUNT OF 6 TALC BUT NOT REDUCE THE AMOUNT OF ASBESTOS. IT'S A 7 BALANCING ACT. SO IT'S VERY CHALLENGING. 8 Q OKAY. WERE YOU ABLE TO FIND A METHOD THAT 9 ALLOWED YOU TO DO THAT? 10 A YES. 11 Q WHAT METHOD WAS THAT? 12 A WELL, WE CALL IT THE BLOUNT METHOD. IT'S A 13 HEAVY LIQUID DENSITY METHOD. 14 MR. PANATIER: ALL RIGHT. AND LET ME -- THIS 15 WILL BE EXHIBIT 928. 16 17 (PLAINTIFFS' EXHIBIT 928 MARKED FOR 18 IDENTIFICATION.) 19 20 BY MR. PANATIER: 21 Q SO I'M HOLDING UP A PAPER CALLED "AMPHIBOLE 22 CONTENT OF COSMETIC AND PHARMACEUTICAL TALCS" BY A.M. 23 BLOUNT. IS THIS WHERE YOU -- YOUR METHOD ORIGINATED? 24 A YES. IT'S ESSENTIALLY HER METHOD. 25 DR. BLOUNT. 26 Q THIS SAYS IT WAS PUBLISHED IN 1991. IS THIS 27 WHERE YOU GOT THE METHOD TO TRY TO SEPARATE OUT THE TALC 28 SO YOU COULD SEE WHAT ASBESTOS, IF ANY, WAS PRESENT?</p>
Page 1732	Page 1734
<p>1 FOLLOWING DIFFERENT METHODOLOGIES THROUGHOUT YOUR CAREER 2 WHEN YOU HAVE ANALYZED PRODUCTS OR AIR SAMPLES FOR 3 ASBESTOS? 4 A YES. 5 Q OKAY. AND WHEN IT COMES TO ANALYZING TALC, 6 WERE THERE ANY PARTICULAR CHALLENGES THAT YOU WERE 7 PRESENTED WITH? 8 A YES. 9 Q AND WHAT WAS THAT? 10 A FIRST CHALLENGE IS THAT THE ASBESTOS, THE 11 AMOUNT OF ASBESTOS FIBERS IN THE TALC SAMPLES ARE VERY 12 SMALL AS COMPARED TO ALL THE TALC. SO THINK OF IT AS 13 THIS. YOU HAVE A MILLION TALC PARTICLES AND MAYBE ONE 14 TO TWO ASBESTOS FIBERS. 15 SO THE CHALLENGE FOR THIS TYPE OF TALC, 16 COSMETIC TALC WAS HOW TO GET A CONCENTRATED SAMPLE THAT 17 GAVE YOU GOOD ANALYTICAL SENSITIVITY, MEANING TO FIND 18 ONE ASBESTOS FIBER, HOW MUCH DO I HAVE TO GET ON TO THE 19 SAMPLE TO MAKE THAT REASONABLE AND ELIMINATE THE TALC? 20 BECAUSE IF YOU DON'T GET RID OF THE TALC, TO 21 GET A SAMPLE WITH WHAT I CALL GOOD ANALYTICAL 22 SENSITIVITY, MEANING I HAVE A VERY GOOD DETECTION LIMIT. 23 SO SAY I HAD A FULL GLASS OF WATER HERE AND I WANTED TO 24 KNOW HOW MUCH LEAD WAS IN THERE. WELL, I WANT TO BE 25 ABLE TO TAKE ALL THE WATER IN HERE TO MEASURE THE LEAD 26 SO I HAVE A VERY HIGH ANALYTICAL SENSITIVITY VERSUS JUST 27 TAKING A LITTLE DROP OUT AND SAYING OKAY, WELL, THERE'S 28 NOTHING IN THERE BECAUSE I ONLY MEASURED THIS LITTLE</p>	<p>1 A YES. 2 Q AND IT'S THE HEAVY LIQUID SEPARATION METHOD. 3 OKAY. LET'S START THERE. HEAVY LIQUID SEPARATION. 4 WHAT DOES THAT MEAN? 5 A SO WATER WEIGHS ABOUT 1 GRAM PER CENTIMETER. 6 SO YOU TAKE A CUBE LIKE A SUGAR CUBE, AND IF YOU PUT 7 WATER IN THAT AND WEIGH IT, IT'S ABOUT 1 GRAM OR SO. 8 WHEN YOU GET THE LIQUIDS THAT HAVE MORE 9 DENSITY, SAY NOW MY 1 CUBIC GRAM WEIGHS 2.6 GRAMS PER 10 CUBIC CENTIMETERS. SO IT'S HEAVIER THAN WATER. 11 SO THINK OF IT AS I'VE GOT A BUNCH OF CORK 12 PARTICLES AND I'VE ALSO GOT A BUNCH OF SAND, AND I PUT 13 IT IN WATER AND I SHAKE IT UP AND JUST LET IT SIT THERE, 14 AND I WANT TO GET THE CORK OUT, AND I WANT IT AT THE TOP 15 BECAUSE IT FLOATS. 16 THE HEAVY LIQUID DOES THE SAME THING. THE 17 TALC HAS LOWER DENSITY OR IT WEIGHS LESS THAN THE 18 ASBESTOS FIBER WE'RE LOOKING FOR. SO IF I PUT IT IN A 19 LIQUID THAT'S HEAVIER THAN THE TALC PARTICLES, THE 20 DENSITY IS MORE BUT LESS THAN THE ASBESTOS SAMPLES. I 21 CAN THEN PUT THAT TOGETHER, PUT IT IN A CENTRIFUGE, SPIN 22 IT REAL FAST. THE TALC GOES TO THE TOP AND THE ASBESTOS 23 GOES TO THE BOTTOM. SO IT'S MY HEAVY LIQUID DENSITY 24 SEPARATION I CAN GET THE ASBESTOS OUT OF THE BOTTOM OF 25 THE TEST TUBE AND TAKE THE TALC OUT FROM THE TOP. IT'S 26 A WAY TO CONCENTRATE IT. 27 Q OKAY. SO BASICALLY THE TALC PARTICLES WOULD 28 BE THE CORK IN THE ANALOGY AND THE ASBESTOS WOULD BE THE</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

14 (Pages 1735 to 1738)

Page 1735	Page 1737
<p>1 SAND IN THE ANALOGY?</p> <p>2 A YES.</p> <p>3 Q OKAY. AND THIS METHOD, WHEN SHE DID IT IN</p> <p>4 1991, WHAT WAS SHE LOOKING AT IT?</p> <p>5 A COSMETIC TALC.</p> <p>6 Q OKAY. AND DID SHE -- THROUGH HER METHOD, WAS</p> <p>7 SHE ABLE TO SEPARATE OUT THE TALC AND BETTER ISOLATE ANY</p> <p>8 ASBESTOS TO THE EXTENT IT WAS PRESENT?</p> <p>9 A YES.</p> <p>10 Q AND DID SHE FIND ASBESTOS?</p> <p>11 A SHE DID.</p> <p>12 Q WHAT DID SHE FIND IT IN?</p> <p>13 A SHE FOUND IT IN A COUPLE ORE SAMPLES AS WELL</p> <p>14 AS A JOHNSON & JOHNSON BABY POWDER SAMPLE OFF THE SHELF.</p> <p>15 Q OKAY. SO I'M GOING TO ASK YOU ABOUT THIS AS</p> <p>16 WELL. ISO METHOD 22262-2. THERE'S A LOT OF 2S THERE.</p> <p>17 WHAT IS THIS?</p> <p>18 A THIS IS THE INTERNATIONAL STANDARDS</p> <p>19 ORGANIZATION WHICH IS ESSENTIALLY A WORLDWIDE ANALYTICAL</p> <p>20 ORGANIZATION THAT PUTS PROTOCOLS, AGAIN, LIKE A RECIPE</p> <p>21 TOGETHER THAT PUBLISHES THEM TO SHOW YOU HOW TO DO</p> <p>22 THINGS WITH DIFFERENT TYPES OF ANALYSIS.</p> <p>23 THIS ONE INVOLVES ASBESTOS BY GRAVIMETRIC AND</p> <p>24 MICROSCOPY METHODS.</p> <p>25 Q DOES IT INVOLVE USING HEAVY LIQUID DENSITY</p> <p>26 SEPARATION JUST LIKE BLOUNT?</p> <p>27 A YES, SIR. IT HAS A WHOLE SECTION ON</p> <p>28 MEASURING. ANALYZING TALC USING THE HEAVY DENSITY</p>	<p>1 FAIR?</p> <p>2 A THAT'S FAIR.</p> <p>3 Q WAS JOHNSON & JOHNSON 20 YEARS BEFORE BLOUNT,</p> <p>4 WERE THEY USING A HEAVY LIQUID SEPARATION METHOD?</p> <p>5 A ONE OF THEIR GROUPS THAT THEY WERE RESEARCHING</p> <p>6 PROPOSED IT.</p> <p>7 Q THEY PROPOSED. WAS IT EVER ADOPTED FOR</p> <p>8 ROUTINE TESTING?</p> <p>9 A NO, NOT THAT I CAN TELL.</p> <p>10 Q ALL RIGHT. SO YOU PUT UP THESE FOUR DIFFERENT</p> <p>11 TYPES OF ASBESTOS HERE: CHRYSOTILE, ANTHOPHYLLITE,</p> <p>12 TREMOLITE, AND ACTINOLITE.</p> <p>13 WHEN YOU SAID THAT THE HEAVY LIQUID SEPARATION</p> <p>14 METHOD ALLOWS YOU TO SEPARATE THE ASBESTOS FROM THE</p> <p>15 TALC, DOES IT HAVE SOME DISADVANTAGES?</p> <p>16 A IT DOES.</p> <p>17 Q AND WHAT'S THE DISADVANTAGE?</p> <p>18 A FIRST THE CHRYSOTILE.</p> <p>19 Q UH-HUH.</p> <p>20 A IT HAS ABOUT THE SAME DENSITY AS TALC. SO IF</p> <p>21 YOU USE THIS METHOD, YOU'RE NOT GOING TO BE ABLE TO</p> <p>22 ANALYZE AND SAY IT HAS CHRYSOTILE ASBESTOS OR NOT.</p> <p>23 Q IS THAT BECAUSE CHRYSOTILE HAS SOME DENSITY</p> <p>24 THAT GETS PULLED OUT WHEN YOU TRY TO REMOVE THE TALC?</p> <p>25 A IT'S THE SAME AS THE TALC.</p> <p>26 Q IT'S THE SAME AS THE TALC?</p> <p>27 A YES. THINK OF IT AS DIFFERENT COLOR CORK. SO</p> <p>28 IT'S ABOUT 2.6 TO 2.8. TALC IS ABOUT 2.6. CHRYSOTILE</p>
Page 1736	Page 1738
<p>1 LIQUID 2.85 GRAMS PER CUBIC CENTIMETER. THAT'S HOW MUCH</p> <p>2 1 CUBIC CENTIMETER OF IT WOULD WEIGH. AND IT SHOWS YOU</p> <p>3 HOW TO USE OPTICAL MICROSCOPY TO ANALYZE IT, SCANNING</p> <p>4 ELECTRON MICROSCOPY IF YOU SO WISH, OR TRANSMISSION</p> <p>5 ELECTRON MICROSCOPY. SO WE HAVE THREE CHOICES, EITHER</p> <p>6 ONE OF THEM OR ALL OF THEM.</p> <p>7 Q OKAY. AND WE TALKED ABOUT R. J. LEE BEFORE,</p> <p>8 WHICH IS WHERE MATTHEW SANCHEZ WORKS. WE'RE GOING TO</p> <p>9 HEAR FROM HIM I THINK TOMORROW OR THE NEXT DAY. HAS R.</p> <p>10 J. LEE UTILIZED THIS VERY METHOD THAT YOU HAVE EMPLOYED</p> <p>11 TO LOOK FOR ASBESTOS IN THE JOHNSON'S BABY POWDER</p> <p>12 SAMPLES TO LOOK FOR ASBESTOS IN TALC AS WELL?</p> <p>13 A YES.</p> <p>14 Q IS THE BLOUNT METHOD TO TRY TO ISOLATE OUT THE</p> <p>15 ASBESTOS FROM THE TALC A RELIABLE AND ACCEPTED METHOD,</p> <p>16 SIR?</p> <p>17 A YES. YOU HAVE TO UNDERSTAND THE HEAVY DENSITY</p> <p>18 LIQUID METHOD HAS BEEN USED FOR YEARS AND YEARS TO</p> <p>19 SEPARATE MINERAL PRODUCTS, ANY TYPE OF PARTICULATE.</p> <p>20 ALICE BLOUNT WAS THE FIRST TO ACTUALLY USE IT</p> <p>21 AND PUBLISH IT. NOT THE FIRST TO USE IT BUT TO PUBLISH</p> <p>22 IT. BUT IT HAS BEEN USED FOR MANY YEARS, AND OTHERS</p> <p>23 HAVE TALKED ABOUT IT FOR USING IN TALC.</p> <p>24 Q AND, IN FACT -- AND I'M GOING TO GET TO ALL OF</p> <p>25 THIS, BUT HAVE YOU REVIEWED HUNDREDS AND HUNDREDS OF</p> <p>26 JOHNSON & JOHNSON INTERNAL DOCUMENTS?</p> <p>27 A YES, SIR. I HAVE.</p> <p>28 Q ALL RIGHT. STARTING LAST SUMMER; IS THAT</p>	<p>1 IS ABOUT 2.8 GRAMS PER CENTIMETER CUBE. SO IT WOULD GO</p> <p>2 WITH THE TALC.</p> <p>3 Q SO IF YOU USE THIS METHOD, JUST</p> <p>4 HYPOTHETICALLY, THERE COULD BE TALC THERE, BUT YOU</p> <p>5 WOULDN'T KNOW IT BECAUSE YOU PULLED IT OUT? I MEAN</p> <p>6 CHRYSOTILE.</p> <p>7 A CORRECT.</p> <p>8 Q AND WHAT ABOUT ANTHOPHYLLITE?</p> <p>9 A WELL, THAT'S SORT OF LIKE A YES AND NO.</p> <p>10 Q OKAY. AND HOW IS THAT?</p> <p>11 A WELL, ANTHOPHYLLITE, THE CHEMISTRY OF</p> <p>12 ANTHOPHYLLITE CAN GO FROM HAVING A DENSITY OF ABOUT 2.8</p> <p>13 WHERE IT HAS NO IRON, UP TO 3.2 GRAMS PER CUBIC</p> <p>14 CENTIMETER WHERE IT HAS IRON IN IT.</p> <p>15 SO WE HAVE SEEN ANTHOPHYLLITE WITH ELEVATED</p> <p>16 LEVELS OF IRON, AND RECENTLY WE'VE DONE A FEW SAMPLES</p> <p>17 WHERE WE'VE SEEN THE ANTHOPHYLLITE WITH NO IRON. IT</p> <p>18 DOESN'T MAKE SENSE THAT IT SHOULD MAKE IT TO THE BOTTOM,</p> <p>19 BUT THIS METHOD IS NOT A HUNDRED PERCENT EFFICIENT. WE</p> <p>20 ALSO SEE TALC PARTICLES AT THE BOTTOM ALONG WITH THE</p> <p>21 SAND OF THE ASBESTOS. SO IT'S NOT A HUNDRED PERCENT</p> <p>22 EFFICIENT.</p> <p>23 TREMOLITE AND ACTINOLITE ARE ALL ABOUT</p> <p>24 3.2 GRAMS. SO THESE TWO TYPES, THE TREMOLITE SERIES AND</p> <p>25 THEN ACTINOLITE, WHICH IS PART OF THE TREMOLITE SERIES,</p> <p>26 IS WHAT WE PRIMARILY FIND WHEN WE DO THIS ANALYSIS.</p> <p>27 Q AND I CIRCLED TREMOLITE THERE. IS TREMOLITE</p> <p>28 WHAT DR. BLOUNT IDENTIFIED WHEN SHE DID HER STUDY?</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

15 (Pages 1739 to 1742)

Page 1739	Page 1741
<p>1 A YES.</p> <p>2 Q ALL RIGHT. SO LET ME SEE IF I CAN PUT IT IN</p> <p>3 TERMS THAT I CAN GET AND CLARIFY A LITTLE BIT.</p> <p>4 BECAUSE OF THE DENSITY OF THESE DIFFERENT</p> <p>5 ASBESTOS PARTICLES, THE METHOD -- IT SEEMS LIKE THE</p> <p>6 METHOD IS MORE PREFERENTIAL TOWARDS SOMETHING LIKE</p> <p>7 TREMOLITE BECAUSE OF THE DENSITY; IS THAT FAIR?</p> <p>8 A WELL, TREMOLITE AND ACTINOLITE, WHICH IS A</p> <p>9 FORM OF TREMOLITE, YES, IT IS. YOU WON'T SEE</p> <p>10 CHRYSOTILE. THAT'S THE DRAWBACK. AND IF ANTHOPHYLLITE</p> <p>11 DOESN'T -- ASBESTOS DOESN'T HAVE ANY IRON. YOU MAY OR</p> <p>12 MAY NOT SEE THAT. SO IT HAS ITS GOOD POINTS AND IT HAS</p> <p>13 SOME BAD POINTS.</p> <p>14 Q OKAY. SO WITH THE ANTHOPHYLLITE, YOU SAID IF</p> <p>15 IT HAD SOME IRON, WOULD THAT MAKE IT HEAVIER?</p> <p>16 A WELL, IT MAKES IT DENSER.</p> <p>17 Q I'M SORRY. MORE DENSE?</p> <p>18 A MORE DENSE. SO THE HIGHER DENSITY GOES TO THE</p> <p>19 BOTTOM. AND IT REMOVES 98 PERCENT OF THE TALC.</p> <p>20 ACTUALLY WHEN YOU TAKE IT OUT OF THE CENTRIFUGE, YOU SEE</p> <p>21 A PLUG, A WHITE PLUG AT THE TOP WHERE THE TALC IS.</p> <p>22 Q AND BY THE WAY, A CENTRIFUGE IS WHAT?</p> <p>23 A IT'S A DEVICE WHERE YOU STICK TUBES IN AND YOU</p> <p>24 BALANCE IT, AND YOU TURN IT ON AND IT SPINS. SO IT GETS</p> <p>25 CENTRIPETAL FORCE. PULLS THINGS TO THE BOTTOM OF THE</p> <p>26 TUBE. IT'S A WAY TO SEPARATE OUT STUFF AT THIS LEVEL.</p> <p>27 BUT IT CAN'T PULL THE TALC DOWN BECAUSE IT CAN'T MAKE IT</p> <p>28 THROUGH THE HEAVY DENSITY.</p>	<p>1 RESULTS ARE?</p> <p>2 A YES. MOST OF THESE TEM PROTOCOLS ARE</p> <p>3 HEALTH-BASED PROTOCOLS FOR THE DEFINITION OF ASBESTOS.</p> <p>4 Q SO WHEN THEY PROVIDE A COUNTING PROTOCOL, ARE</p> <p>5 YOU SAYING THAT'S WHAT THEY WANT IDENTIFIED TO THEN MAKE</p> <p>6 THEIR DECISIONS?</p> <p>7 MR. BAILEY: OBJECTION. LEADING, YOUR HONOR.</p> <p>8 THE COURT: OVERRULED.</p> <p>9 THE WITNESS: YES, IT HAS A CERTAIN SIZE RANGE</p> <p>10 FIBER, WHAT THE CRITERIA, THE MINIMUM CRITERIA TO CALL</p> <p>11 IT A FIBER IN ASBESTOS AND BUNDLES AND CLUSTERS. SO IT</p> <p>12 HAS THESE COUNTING PROTOCOLS ON BASICALLY THE RIGHT</p> <p>13 CHEMISTRY, THE RIGHT CRYSTALLINE PATTERNS, THE RIGHT</p> <p>14 CRYSTALS, AND THEN DOES IT HAVE THE RIGHT SIZE TO MEET</p> <p>15 THE HEALTH BASE DEFINITION. IT'S SORT OF LIKE THE</p> <p>16 MINIMUM. THIS IS THE MINIMUM IT HAS TO BE AND THEN</p> <p>17 ANYTHING BIGGER.</p> <p>18 BY MR. PANATIER:</p> <p>19 Q OKAY. SO FOR THE AHERA TEM METHOD, YOU SAID</p> <p>20 IT'S GOT TO BE ONE OF THE SIX MINERALS THAT WE'VE TALKED</p> <p>21 ABOUT. WE'LL JUST CALL THEM THE ASBESTOS MINERALS; IS</p> <p>22 THAT FAIR?</p> <p>23 A THE REGULATED ASBESTOS MINERALS IS PROBABLY</p> <p>24 THE BEST WAY TO SAY IT.</p> <p>25 Q I'LL PUT REGULATED ASBESTOS MINERALS. AND</p> <p>26 THEN YOU SAID IT HAS TO BE A FIBER; RIGHT?</p> <p>27 A YES. IT HAS TO BE -- THE DEFINITION IS IT HAS</p> <p>28 TO BE LONGER THAN 0.5 MICRONS IN LENGTH.</p>
Page 1740	Page 1742
<p>1 Q BUT YOU STILL SEE A LITTLE BIT OF THE TALC?</p> <p>2 A EVERY SAMPLE WE HAVE, BUT IT ELIMINATES SO</p> <p>3 MUCH OF IT THAT WE THEN DON'T HAVE TO WORRY ABOUT</p> <p>4 OVERLOADING THE SAMPLE.</p> <p>5 Q OKAY. SO LET'S TALK ABOUT THIS SAYS,</p> <p>6 "ASBESTOS IDENTIFICATION PROTOCOL." SO THEN DID YOU</p> <p>7 HAVE TO COME UP WITH A WAY TO IDENTIFY WHETHER OR NOT</p> <p>8 YOU WERE SEEING ASBESTOS ONCE YOU HAD PREPARED IT?</p> <p>9 A YES. WELL, WE DIDN'T REALLY COME UP WITH IT.</p> <p>10 THESE ARE STANDARD PROTOCOLS FOR IDENTIFYING ASBESTOS</p> <p>11 AND WHAT IS THE CRITERIA FOR SAYING IT IS ASBESTOS</p> <p>12 VERSUS NONASBESTOS.</p> <p>13 Q AND AHERA IS A FEDERAL REGULATION; RIGHT?</p> <p>14 A YES, SIR.</p> <p>15 Q AHERA -- WHAT IS THE GENERAL USE THAT THAT'S</p> <p>16 BEEN EMPLOYED FOR THROUGHOUT SINCE IT WAS ESTABLISHED?</p> <p>17 A WHEN IT WAS ESTABLISHED, IT WAS A GUIDANCE FOR</p> <p>18 SCHOOLS AND CONSULTANTS ON HOW TO DEAL WITH ASBESTOS</p> <p>19 ISSUES IN SCHOOLS, THE IDENTIFICATION. IF YOU'RE GOING</p> <p>20 TO REMOVE IT, THEN HOW TO MEASURE ONCE YOU REMOVE THE</p> <p>21 ASBESTOS TO MAKE SURE THE AIR IS CLEAN. SO THEY HAVE A</p> <p>22 PARTICULAR PROTOCOL FOR TRANSMISSION ELECTRON MICROSCOPY</p> <p>23 IN AIR SAMPLES TO DETERMINE IF IT'S A SUCCESS --</p> <p>24 ACCEPTABLE FOR THE KIDS AND TEACHERS AND PEOPLE TO GO</p> <p>25 BACK INTO THE BUILDINGS AFTER THEY'VE REMOVED THE</p> <p>26 ASBESTOS.</p> <p>27 Q IS THIS A METHOD THAT OTHERS WOULD USE TO MAKE</p> <p>28 HEALTH AND SAFETY DETERMINATIONS BASED ON WHATEVER THE</p>	<p>1 Q DID I FACE THE GREATER THAN SIGN THE RIGHT</p> <p>2 WAY?</p> <p>3 A THAT'S THE RIGHT WAY.</p> <p>4 Q OKAY. SO TO BE A FIBER, IT HAS TO BE GREATER</p> <p>5 THAN HALF A MICRON LONG?</p> <p>6 A CORRECT. AND THEN IT HAS TO HAVE AN ASPECT</p> <p>7 RATIO. THAT'S THE LENGTH TO WIDTH OF AT LEAST 5-TO-1 OR</p> <p>8 GREATER.</p> <p>9 Q OKAY. AND ARE THESE GREATER THAN, OR GREATER</p> <p>10 THAN OR EQUAL TO?</p> <p>11 A GREATER THAN OR EQUAL TO THE ASPECT RATIO.</p> <p>12 AND IT HAS TO HAVE SUBSTANTIALLY PARALLEL SIDES ON THE</p> <p>13 LENGTH.</p> <p>14 Q AND THIS IS THE COUNTING PROTOCOL THAT AHERA</p> <p>15 GIVES YOU?</p> <p>16 A RIGHT. IF YOU'RE ANALYZING -- THIS IS BY</p> <p>17 TRANSMISSION ELECTRIC MICROSCOPY. IF YOU'RE ANALYZING</p> <p>18 IT AND IT MEETS THIS CRITERIA FOR A FIBER, THEN YOU</p> <p>19 WOULD DO THE MICROCHEMISTRY ON IT. WHAT ELEMENTS ARE</p> <p>20 PRESENT BECAUSE EACH OF THESE MINERALS ARE PRETTY</p> <p>21 UNIQUE, AND THEN YOU HAVE TO DETERMINE IT HAS THE RIGHT</p> <p>22 CRYSTALLINE STRUCTURE.</p> <p>23 Q AND WE'VE HEARD SOME OF THAT. DR. COMPTON WAS</p> <p>24 HERE. HE'S TALKED A LITTLE BIT ABOUT THAT.</p> <p>25 FOR ANY ANALYSIS THAT YOU DID ON THESE SAMPLES</p> <p>26 IN THIS CASE, DID YOU DO THE CHEMISTRY AND THE CRYSTAL</p> <p>27 TO VERIFY THE MINERAL?</p> <p>28 A YES.</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

16 (Pages 1743 to 1746)

Page 1743	Page 1745
<p>1 Q AND YOU SAID THE FIRST THING YOU DO IS REALLY</p> <p>2 YOU'RE LOOKING THROUGH THE TEM, YOU SEE SOMETHING THAT</p> <p>3 YOU CAN IDENTIFY AS A FIBER FAR AS THE SHAPE?</p> <p>4 A A FIBER OR A BUNDLE, OR YOU HAVE MULTIPLE</p> <p>5 FIBERS OR YOU HAVE A MATRIX MATERIAL WITH THE FIBERS</p> <p>6 STICKING OUT OF IT. SORT OF LIKE A HAIRY BALL. THOSE</p> <p>7 ARE THE FOUR THINGS YOU'RE LOOKING FOR.</p> <p>8 Q AND ONCE YOU FIND THAT, THEN YOU SEE IF IT'S</p> <p>9 THE CORRECT MINERAL?</p> <p>10 A CORRECT.</p> <p>11 Q SO WE'RE GOING TO TALK ABOUT SOME OF YOUR</p> <p>12 FOUNDATION BEFORE WE GET TO THE RESULTS HERE ON THIS</p> <p>13 TESTING YOU DID. WHEN DID YOU DO THIS TESTING ON THE</p> <p>14 JOHNSON & JOHNSON SAMPLES?</p> <p>15 A I THINK WE STARTED IN EARLY 2017, AND THEN</p> <p>16 IT'S GONE FORWARD.</p> <p>17 Q ALL RIGHT. AND FOR THE SAMPLES THAT YOU</p> <p>18 LOOKED AT, CAN YOU GIVE US -- WELL, HERE. LET ME GO TO</p> <p>19 RIGHT HERE.</p> <p>20 MR. BAILEY: EXCUSE ME, YOUR HONOR. THIS IS</p> <p>21 PART OF A MOTION THAT WAS TOLD WE WOULD APPROACH ON.</p> <p>22 MR. PANATIER: WE'RE JUST LAYING THE</p> <p>23 FOUNDATION.</p> <p>24 THE COURT: I'M GOING TO ALLOW THIS PORTION TO</p> <p>25 PROCEED.</p> <p>26 BY MR. PANATIER:</p> <p>27 Q SO WE CAN UNDERSTAND WHAT YOU LOOKED AT AND</p> <p>28 WHAT YOU CONSIDERED. WE'VE GOT THE PICTURES. ARE THESE</p>	<p>1 JOHNSON --</p> <p>2 Q OKAY.</p> <p>3 A -- BABY POWDER. THE SHOWER TO SHOWER WENT A</p> <p>4 COUPLE YEARS MORE --</p> <p>5 Q ALL RIGHT.</p> <p>6 A -- FOR THE ITALIAN.</p> <p>7 Q ALL RIGHT. AND THEN WAS THERE EVER ANOTHER</p> <p>8 GAP FOR ITALIAN -- WHEN THE ITALIAN RETURNED OR DID IT</p> <p>9 EVER RETURN?</p> <p>10 A IT RETURNED IN 1980 DUE TO A STRIKE IN THE</p> <p>11 VERMONT MINES.</p> <p>12 Q ALL RIGHT. AND SO THEN TAKE US THROUGH WHEN</p> <p>13 WERE THE -- GENERALLY SPEAKING WE KNOW THERE WAS A</p> <p>14 LITTLE OVERLAP. WHEN WERE THE VERMONT YEARS?</p> <p>15 A WE CAN SAY APPROXIMATELY 1968 TO '69. TAKE</p> <p>16 OUT 1980 AND THEN GO TO APPROXIMATELY 2003 AND 2004.</p> <p>17 Q AFTER 2003, 2004, THEN WHAT SOURCE WAS BEING</p> <p>18 USED?</p> <p>19 A FOR THIS COUNTRY, CHINA.</p> <p>20 Q AND JUST FOR SOME ADDITIONAL FOUNDATION,</p> <p>21 YOU'VE GOT A COUPLE SHOWER TO SHOWER PRODUCTS THAT YOU</p> <p>22 ALSO LOOKED AT. GENERALLY WHEN WERE THOSE FROM AND WHO</p> <p>23 MADE THOSE?</p> <p>24 A THOSE ARE FROM GENERALLY 20 -- 2013, 2014,</p> <p>25 SOMEWHERE IN THAT RANGE. AND THIS WAS MADE BY A COMPANY</p> <p>26 CALLED VALIANT.</p> <p>27 Q NOW, THAT'S NOT JOHNSON & JOHNSON; RIGHT?</p> <p>28 A NO. JOHNSON & JOHNSON SOLD THIS PRODUCT LINE</p>
Page 1744	Page 1746
<p>1 PICTURES THAT YOUR OFFICE TOOK OF THE DIFFERENT BOTTLES?</p> <p>2 A YES.</p> <p>3 Q AND WERE -- CAN YOU GIVE US GENERALLY AN</p> <p>4 APPRECIATION OF THE ERAS THAT THESE BOTTLES CAME FROM?</p> <p>5 A STARTING IN APPROXIMATELY 1943 TO '52, ONE</p> <p>6 SET.</p> <p>7 Q OKAY.</p> <p>8 A AND THEN FROM '52 TO '64, ANOTHER SET. AND</p> <p>9 THAT HAS TO DO WITH WHAT'S ON THE CANS, METAL, PLASTIC.</p> <p>10 FROM '65 ON, WE HAVE ONES THAT ARE IN THAT '65 ON. AND</p> <p>11 THEN WE HAVE ONES THAT ARE -- WE KNOW THAT ARE IN THE</p> <p>12 '90S. AND THEN WE HAVE ONES THAT WE KNOW THAT ARE MORE</p> <p>13 OFF THE SHELF, 2014, 2013. SO IT REPRESENTS THREE</p> <p>14 DIFFERENT MINES.</p> <p>15 Q HAVE YOUR TESTS REPRESENTED THOSE THREE</p> <p>16 DIFFERENT MINES BASED ON THE DATES OF THESE CONTAINERS?</p> <p>17 A SOME OF THEM THE DATES OF THE CONTAINER,</p> <p>18 WHAT'S WRITTEN ON THE CONTAINER, THE CONSTRUCTION OF THE</p> <p>19 CONTAINER, YES.</p> <p>20 Q AND WHAT THREE DIFFERENT MINES ARE REPRESENTED</p> <p>21 BY THE DIFFERENT SAMPLES THAT YOU'VE STUDIED?</p> <p>22 A THE ITALIAN MINE, THE VERMONT MINE, AND THE</p> <p>23 CHINA MINE.</p> <p>24 Q ALL RIGHT. AND FOR THE ITALIAN MINE,</p> <p>25 GENERALLY SPEAKING, WHEN WAS THAT, THE ITALIAN TALC</p> <p>26 USED?</p> <p>27 A PRIMARILY FROM ABOUT 1942 OR 1943 TO</p> <p>28 APPROXIMATELY 1968 OR '69 WOULD BE ITALIAN FOR JOHNSON &</p>	<p>1 SOMETIME, 2009, 2010, I THINK.</p> <p>2 Q ALL RIGHT. DID THEY -- HERE'S MY QUESTION.</p> <p>3 DID THEY CONTINUE UTILIZING THE SAME SOURCE MINE FOR THE</p> <p>4 VALIANT AS THEY WERE USING WHEN IT WAS J & J?</p> <p>5 A YES. THE CHINA MINES.</p> <p>6 Q AND THEN DID YOU ALSO LOOK AT JOANNE</p> <p>7 ANDERSON'S SAMPLES, THE TWO 1 1/2 OUNCE BOTTLES?</p> <p>8 A I DID.</p> <p>9 Q I WANT TO ASK YOU, WHAT ARE WE LOOKING AT</p> <p>10 HERE.</p> <p>11 MR. BAILEY: YOUR HONOR, I WANT TO MAKE AN</p> <p>12 OBJECTION.</p> <p>13 THE COURT: APPROACH SIDEBAR.</p> <p>14</p> <p>15 (THE FOLLOWING DISCUSSION WAS HELD AT</p> <p>16 SIDEBAR OUTSIDE THE PRESENCE OF THE JURY:)</p> <p>17</p> <p>18 MR. BAILEY: YOUR HONOR, I THOUGHT WE WERE</p> <p>19 PRETTY CLEAR ON HOW WE WERE GOING TO HANDLE THE PENDING</p> <p>20 MOTION IN LIMINE IN THAT HE WAS GOING TO APPROACH BEFORE</p> <p>21 WE GOT INTO ANY OF THE PRODUCTS THAT ARE SUBJECT OF THE</p> <p>22 MOTION.</p> <p>23 NOW WE'RE GETTING INTO CONTAINERS AND STARTING</p> <p>24 TO DISCUSS WHETHER THEY CAN BE OPENED OR NOT, AND WE'RE</p> <p>25 JUST INCHING RIGHT PAST THE MOTION IN LIMINE. I DID GET</p> <p>26 A RECORD ON THAT.</p> <p>27 MR. PANATIER: I SAID THAT I WOULD STOP BEFORE</p> <p>28 WE GOT TO THE RESULTS, AND I WOULD LAY ALL OF THE</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

17 (Pages 1747 to 1750)

Page 1747	Page 1749
<p>1 FOUNDATION FOR DR. LONGO, FOR WHY HE RELIED ON THESE AS 2 RELIABLE RESULTS. 3 THE COURT: I DON'T HAVE AN ISSUE WITH HOW 4 IT'S BEING HANDLED BY MR. PANATIER AT THIS POINT. MY 5 ISSUE IS FOR COUNSEL TO APPROACH BEFORE YOU GET TO ANY 6 OF THE RESULTS AND, HOWEVER, YOU CAN CONTINUE TO OBJECT 7 ANYTIME YOU THINK THAT YOU NEED TO. SO AT THIS POINT 8 I'M GOING TO ALLOW COUNSEL TO PROCEED. 9 JUST MAKE SURE YOU DON'T GET INTO ANY RESULTS, 10 ANY ANALYSIS OR THINGS OF THAT SORT. YOU CAN JUST LAY 11 THE FOUNDATION ABOUT WHAT HE LOOKED AT AND CONTAINERS, 12 THINGS OF THAT SORT. 13 MR. PANATIER: OKAY. 14 MR. BAILEY: YOUR HONOR, MAY I DO THIS. MAY I 15 HAVE A RUNNING OBJECTION TO ANYTHING RELATING TO ANY OF 16 THE CONTAINERS OTHER THAN THE ANDERSON CONTAINERS JUST 17 SO I DON'T HAVE TO KEEP STANDING UP? 18 THE COURT: SURE. 19 MR. PANATIER: I'LL STIPULATE TO THE OBJECTION 20 IS PRESERVED. 21 THE COURT: OKAY. 22 23 (END OF SIDEBAR DISCUSSION.) 24 25 THE COURT: BEFORE WE PROCEED, IS THERE A 26 QUESTION? 27 JUROR: OH, I STOOD UP, YOUR HONOR. MY 28 APOLOGY IF IT'S AGAINST THE RULES. I JUST COULDN'T READ</p>	<p>1 THIS JOHNSON'S BABY POWDER SAYS "BORATED TALCUM POWDER." 2 WE KNOW THAT IS PRE-1942. AND IT WAS EMPTY. WHAT'S 3 INTERESTING HERE IS HOW THE CORNERS OF THE CANS ARE ALL 4 BENT IN. 5 Q OKAY. AND WHAT'S INTERESTING ABOUT THAT? 6 A THE ONLY WAY YOU CAN GET THESE -- THE TOPS OFF 7 ON THESE METAL CANS IS YOU HAVE TO DEFORM THE CAN 8 BECAUSE OF THE TIGHT SEAL THAT'S ON THERE BECAUSE THESE 9 CONTAINERS ARE DESIGNED TO BE TAMPERPROOF. 10 Q AND DO YOU KNOW BASED ON LOOKING AT JOHNSON & 11 JOHNSON DOCUMENTATION THAT THEY ARE DESIGNED TO BE 12 TAMPERPROOF? 13 A YES. IF YOU THINK ABOUT IT, IT MAKES SENSE. 14 YOU DON'T WANT SOMEBODY TURNING ONE OVER, ESPECIALLY IF 15 YOU HAVE AN INFANT OR SOMEBODY THAT'S HOLDING IT WHILE 16 YOU'RE CHANGING THE DIAPER. AND THAT'S SPECIFICALLY WHY 17 THEY DID THIS SO ALL OF A SUDDEN YOU DON'T GET 10-OUNCES 18 OF TALCUM POWDER INTO THE FACE. SO THEY DESIGN IT 19 SPECIFICALLY, YOU CAN'T GET THEM OFF. 20 AND YOU CAN'T -- WE'VE TRIED JUST BY HAND 21 PRESSURE. WE GOT THE STRONGEST GUY WE HAD, AND OF 22 COURSE HE WAS GOING TO SHOW US, AND HE ACTUALLY CUT HIS 23 HAND ON THE PLASTIC. YOU HAVE TO DEFORM THE CANS TO GET 24 THE CONTAINER OPEN. 25 Q OKAY. AND JUST GOING BACK UP TO THIS, IT 26 LOOKS LIKE THERE WERE A NUMBER OF THOSE METAL CANS. 27 WHEN YOU TOOK THE SAMPLES OUT OF THOSE TO ACTUALLY DO 28 THE TESTING, IS THAT WHAT HAD TO HAPPEN? YOU HAD TO</p>
Page 1748	Page 1750
<p>1 THE NEXT LINE AFTER JOHNSON TO DESCRIBE THE CONTAINER 2 AND IT SAYS "ANTISEPTIC." 3 THE COURT: YOU CAN PROCEED. 4 BY MR. PANATIER: 5 Q DOES THAT SAY "ANTISEPTIC"? 6 A IT DOES. 7 Q SO OBVIOUSLY YOU'RE LOOKING AT SOME SAMPLES 8 THAT ARE VERY OLD; IS THAT FAIR? 9 A THAT'S FAIR. 10 Q WERE YOU ABLE AS A SCIENTIST TO SATISFY 11 YOURSELF THAT THESE WERE SUFFICIENTLY RELIABLE AND THAT 12 THE POWDER INSIDE WAS SOMETHING YOU COULD SUFFICIENTLY 13 RELY UPON FOR TESTING? 14 A YES. NOT THESE SAMPLES, BUT YES. 15 Q TELL US ABOUT THESE. I WANT TO ASK ABOUT 16 THESE. 17 A THE TOP ARE -- SAYS "ANTISEPTIC BABY POWDER." 18 AND THAT IS PRE-1900. 19 Q OKAY. 20 A BUT IT WAS MANUFACTURED IN 1986. IT WAS A 21 PROMOTION. SO YOU CAN SEE THAT THIS IS A TOP, AND 22 HERE'S WHAT EVERY ONE OF THEM LOOKED LIKE. THIS 23 PROMOTION WAS THAT IT HAD A COUPON IN THERE FOR A BOTTLE 24 OF JOHNSON & JOHNSON BABY POWDER AND THEY WERE GIVING 25 THESE OUT. THESE WERE SENT BY ONE OF MY CLIENTS. 26 Q THIS IS ONE OF THE LAW FIRMS THAT SENT YOU 27 SAMPLES? 28 A YES. THEY SENT ME THREE EMPTY CANS. AND THEN</p>	<p>1 DEFORM THE CANS TO OPEN THEM? 2 A YES AND NO. 3 Q OKAY. WHAT'S THE YES AND WHAT'S THE NO? 4 A NO. WE DID NOT DO THAT BECAUSE WE DIDN'T WANT 5 TO -- WE WANTED TO SHOW THE INTEGRITY OF THE CAN, AND 6 SOMEBODY CAME AND INSPECTED IN THESE TYPES OF 7 SITUATIONS. 8 WHEN JOHNSON & JOHNSON REPRESENTATIVES CAME 9 FOR US TO GIVE THEM SAMPLES THAT THEY COULD TEST, EVERY 10 METAL CAN HAD TO BE DEFORMED TO GET THEM OPENED SO WE 11 COULD GET THE MATERIAL OUT. 12 Q WHEN YOU GUYS DID THE TESTING, DID YOU JUST 13 SHAKE IT OUT? 14 A YES. 15 Q OKAY. SO WERE THERE ANY CANS WHERE YOU WERE 16 JUST ABLE TO POP IT OFF AND GET THE TALC? 17 A NO. YOU COULDN'T DO IT. 18 Q AND FOR ALL OF THE CANS THAT WHEN THE JOHNSON 19 & JOHNSON REPRESENTATIVES CAME TO GET THEIR SAMPLES OF 20 THESE DIFFERENT EXEMPLARS, WERE THEY ALL LOOKING LIKE 21 THAT AT THE BOTTOM? 22 A NO. THIS ONE HAD BEEN EMPTY FOR A LONG TIME. 23 Q OH, I'M SORRY. I MEAN AS FAR AS HOW THE CAN 24 HAD TO BE DEFORMED. 25 A YES. WE REMOVED THE MATERIALS. NOW, WE DON'T 26 HAVE THEM IN THE METAL CANS ANY MORE IN THE SAMPLES. 27 THEY'RE IN ACTUAL SAMPLE JARS, BUT THEY WERE PRESENT 28 WHEN WE DID THAT SO THEY COULD SEE IT BEING OPENED AND</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

18 (Pages 1751 to 1754)

Page 1751	Page 1753
<p>1 WHAT WE HAD TO DO. AND THEN EVEN THE PLASTIC ONES</p> <p>2 SHOWED DAMAGE WHEN YOU OPEN THEM.</p> <p>3 Q AND WE HAVE A PICTURE OF THAT. BUT I JUST</p> <p>4 WANT TO ASK YOU, SO WHEN THESE WERE ACTUALLY OPENED FOR</p> <p>5 THE FIRST TIME, JOHNSON & JOHNSON'S REPRESENTATIVES WERE</p> <p>6 ACTUALLY THERE TO SEE IT?</p> <p>7 A THAT'S CORRECT.</p> <p>8 Q OKAY. SO YOU SAID YOU LOOKED AT THE PLASTIC</p> <p>9 AS WELL TO MAKE SURE THAT IT WASN'T TAMPERED WITH. WHAT</p> <p>10 ARE WE LOOKING AT HERE?</p> <p>11 A WELL, HERE'S ONE OF OUR SAMPLES, NOT THAT WE</p> <p>12 ANALYZED FOR THE REPORTS, BUT THE ONE WE BOUGHT OFF THE</p> <p>13 SHELF. WE TRIED TO FIGURE OUT HOW CAN WE GET THE TOP</p> <p>14 OFF BECAUSE YOU CANNOT TURN AND PULL THEM OFF. AT LEAST</p> <p>15 NONE OF US COULD.</p> <p>16 SO HERE WE HAVE A PICTURE ON THE SIDE, AND</p> <p>17 HERE IS A HIGHER MAGNIFICATION ON ONE OF OUR OPTICAL</p> <p>18 MICROSCOPES. AND IF YOU SEE RIGHT IN THE MIDDLE, YOU</p> <p>19 CAN SEE A DENT. THE PLASTIC IS SUCH THAT WHEN YOU GO</p> <p>20 AND PRY IT OFF, EVERYTHING LEAVES A MARK. AND WE WERE</p> <p>21 ACTUALLY -- IT DAMAGES THE TOP UNDERNEATH WHERE IT CLIPS</p> <p>22 ON. SO WE -- YOU CANNOT GET THESE OFF WITHOUT DOING</p> <p>23 THIS TYPE OF DAMAGE.</p> <p>24 Q SO WHEN YOU -- WHEN YOU LOOKED AT ALL OF</p> <p>25 THESE, DID YOU INSPECT THEM TO MAKE SURE THAT NONE OF</p> <p>26 THEM HAD BEEN PRIED OFF BEFORE?</p> <p>27 A YES.</p> <p>28 Q OKAY. HAD ANY OF THEM BEEN PRIED OFF BEFORE?</p>	<p>1 A CORRECT. BECAUSE OF THE SOFTNESS AND THE SIZE</p> <p>2 OF THE TALC, THEY COULD FIND NO WAY TO GET IT BACK INTO</p> <p>3 THE BOTTLE THROUGH THE HOLES. SO WHAT THEY DID -- NO.</p> <p>4 SO THEIR ONLY WAY TO GET IT BACK IN THE BOTTLE WITHOUT</p> <p>5 DESTROYING THE TOP WAS TO DRILL A HOLE IN THE BOTTOM TO</p> <p>6 BOTH GET IT OUT AND TO PUT IT BACK IN. THE DENSITY OF</p> <p>7 IT IS SO LIGHT BECAUSE OF ITS SIZE, THEY CAME UP WITH</p> <p>8 YOU COULD NOT GET IT BACK INTO THE BOTTLE THROUGH THE</p> <p>9 HOLES.</p> <p>10 Q BUT LET ME ASK YOU, HASN'T JOHNSON & JOHNSON</p> <p>11 SHOWED YOU A YOUTUBE VIDEO OF A LADY REPLACING HER TALC</p> <p>12 THROUGH THE HOLES?</p> <p>13 A THE TURKEY BASTER TECHNIQUE. THAT WAS CLEVER.</p> <p>14 Q IS THERE ANY EVIDENCE THAT YOU'RE AWARE OF</p> <p>15 BASED ON YOUR ANALYSIS THAT THE POWDER ACTUALLY FOUND IN</p> <p>16 THESE, THAT SOMEBODY USED A TURKEY BASTER ON EVERY</p> <p>17 SINGLE ONE OF THESE TO REPLACE IT WITH SOMEBODY ELSE'S</p> <p>18 TALC?</p> <p>19 A NO. THERE IS NO EVIDENCE, AND SOME OF THESE</p> <p>20 ARE FULL. THE TURKEY BASTER TECHNIQUE WON'T WORK ON A</p> <p>21 FULL BOTTLE. YOU HAVE TO BE ABLE TO EXPEL SUFFICIENT</p> <p>22 AIR TO SUCK IT BACK IN THROUGH THE TOP.</p> <p>23 Q AND THESE -- FOR THE MOST PART, DID THESE COME</p> <p>24 FROM DIFFERENT SOURCES?</p> <p>25 A CORRECT.</p> <p>26 Q CAN YOU TELL US WHAT DIFFERENT SOURCES</p> <p>27 GENERALLY THEY CAME FROM?</p> <p>28 A METAL CANS DON'T WORK WITH SQUEEZING THE AIR</p>
Page 1752	Page 1754
<p>1 A THEY HAD NOT.</p> <p>2 Q OKAY. AND FOR ALL OF THE SAMPLES YOU LOOKED</p> <p>3 AT, WERE THE BOTTLES INTACT?</p> <p>4 A YES.</p> <p>5 Q WERE THEY AS YOU WOULD EXPECT TO FIND THEM?</p> <p>6 A YES.</p> <p>7 Q WAS THERE ANYTHING ABOUT THE POWDER INSIDE</p> <p>8 THAT TOLD YOU THIS WAS CONTAMINATED? THIS HAD BEEN</p> <p>9 TAMPERED WITH IN ANY WAY?</p> <p>10 A NO. IT'S -- IN MY OPINION, IT WAS THE</p> <p>11 ORIGINAL POWDER. IN ORDER TO REPLACE THE POWDER,</p> <p>12 ESPECIALLY THE ONES THAT ARE FULL OR IN THE CANS, YOU</p> <p>13 HAVE TO PRY THE TOP OFF.</p> <p>14 NOW, THERE IS A SHAKER. YOU CAN TURN IT. IT</p> <p>15 TURNS AND SORT OF LIKE A SPICE WHERE YOU COULD TURN AND</p> <p>16 SHAKE IT OUT. YOU CAN TURN AND SHAKE IT OUT. BUT THERE</p> <p>17 WAS A PUBLISHED PAPER RECENTLY ADDRESSED THIS ISSUE.</p> <p>18 YOU CAN'T PUT IT BACK IN THROUGH THE HOLES.</p> <p>19 Q SO WHICH PAPER WAS THAT?</p> <p>20 MR. BAILEY: OBJECTION, YOUR HONOR. HEARSAY.</p> <p>21 NO FOUNDATION.</p> <p>22 THE COURT: I'LL SUSTAIN THE OBJECTION.</p> <p>23 WHY DON'T YOU LAY FOUNDATION.</p> <p>24 BY MR. PANATIER:</p> <p>25 Q WHY DON'T WE ASK YOU WHAT YOU LEARN -- WE</p> <p>26 CAN'T QUOTE FROM THE PAPERS.</p> <p>27 WHAT DID YOU LEARN FROM THIS PUBLISHED PAPER?</p> <p>28 THIS WAS THE PIERCE PAPER YOU SAID?</p>	<p>1 OUT. THESE SAMPLES CAME FROM A COLLECTOR, AND THEY ALSO</p> <p>2 CAME FROM LANIER'S MOSTLY. THE MAJORITY OF THEM CAME</p> <p>3 FROM EBAY FROM DIFFERENT AREAS AROUND.</p> <p>4 Q YOU SAID LANIER. IS THAT ONE OF THE LAW</p> <p>5 FIRMS?</p> <p>6 A YEAH. THE LANIER LAW FIRM. ONE OF THEIR</p> <p>7 SAMPLES ACTUALLY CAME FROM A CLIENT.</p> <p>8 AND THEN YOUR SAMPLES CAME FROM EITHER CLIENTS</p> <p>9 OR YOU PURCHASED THEM. WE HAVE A HISTORICAL SAMPLE FROM</p> <p>10 JOHNSON & JOHNSON WHERE THEY SAID IT'S A 1978 JOHNSON &</p> <p>11 JOHNSON, AND THEY SENT IT TO US WITH THE PAPERWORK.</p> <p>12 AND THEN WE HAVE ADDITIONAL -- SOME ADDITIONAL</p> <p>13 SAMPLES FROM YOU, WHAT ACTUALLY CAME FROM THE PLAINTIFF</p> <p>14 IN THIS CASE. SO THAT'S WHERE THEY COME FROM.</p> <p>15 Q ALL RIGHT. NOW, WE HAVE ALL OF THESE</p> <p>16 DIFFERENT SOURCES. WERE YOU ABLE TO SAY OH, BOY, THESE</p> <p>17 ONES FROM THIS LAWYER WERE SOMEHOW DIFFERENT THAN THE</p> <p>18 OTHERS OR THE ONES FROM EBAY WERE SOMEHOW DIFFERENT?</p> <p>19 A NO. THEY WERE ALL THE SAME. WHEN I SAY ALL</p> <p>20 THE SAME, TO JOHNSON & JOHNSON. THE SAME. THE</p> <p>21 MATERIALS WERE THE SAME. THE PARTICLE SIZES WERE THE</p> <p>22 SAME. WE COULDN'T TELL YOU A DIFFERENCE BETWEEN LOOKING</p> <p>23 AT IT AS MATERIAL SCIENTISTS. WE COULDN'T TELL YOU THE</p> <p>24 DIFFERENCE IN THE SUBSTANCE OF THE TALC IN THERE FROM</p> <p>25 ONE BOTTLE TO THE NEXT BECAUSE IT WAS ALL CONSISTENT IN</p> <p>26 SIZE.</p> <p>27 Q SO THAT'S WHAT I WANT TO ASK YOU. SIZE.</p> <p>28 OH, FIRST OF ALL, WHAT IS THIS? AND THEN</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

19 (Pages 1755 to 1758)

<p style="text-align: right;">Page 1755</p> <p>1 WE'LL GET TO SIZE.</p> <p>2 A OH, THIS IS A BIOHAZARD HOOD. THIS IS WHERE</p> <p>3 WE WOULD DO A LOT OF WORK WITH THESE TYPES OF SAMPLES</p> <p>4 AND THEY COULD HAVE ASBESTOS IN THEM OR OTHER TOXINS</p> <p>5 THAT CAN BE FILTERED IN THIS TYPE OF APPARATUS.</p> <p>6 Q OKAY. AND WHENEVER YOU ARE HANDLING THESE</p> <p>7 MATERIALS, WERE THEY DONE UNDER A HOOD LIKE THIS?</p> <p>8 A YES, SIR.</p> <p>9 Q WHY IS THAT BEING DONE? WHY IS IT DONE UNDER</p> <p>10 A HOOD?</p> <p>11 A WELL, THE MOST IMPORTANT THING IS NOT TO</p> <p>12 CONTAMINATE THE PERSON USING, HANDLING THE SAMPLE. THE</p> <p>13 SECONDARY THING IS WE DON'T WANT ANY MATERIALS TO GET</p> <p>14 OUT INTO THE LAB AND CAUSE ANY CONTAMINATION.</p> <p>15 Q NOW, ARE YOU CONFIDENT THAT NOTHING FROM YOUR</p> <p>16 OWN LAB CONTAMINATED ANY OF THESE?</p> <p>17 A OH, YEAH.</p> <p>18 Q AND HOW ARE YOU CONFIDENT ABOUT THAT?</p> <p>19 A WELL, WE WOULD HAVE HAD TO SOMEHOW -- WE WOULD</p> <p>20 HAVE HAD TO HAVE TREMOLITE ASBESTOS IN THAT LAB AT SOME</p> <p>21 ASTRONOMICAL CONCENTRATION, SAY A THOUSAND FIBERS PER</p> <p>22 CC. IF SOMEHOW WE HAD IT OPEN AND SOMEHOW IT WORKED ITS</p> <p>23 WAY IN THE HOOD, THAT WOULD BE IMPOSSIBLE. AND</p> <p>24 TREMOLITE, AT LEAST, ASBESTOS IS NOT ROUTINELY FOUND.</p> <p>25 SO IT'S KIND OF RARE, SO THERE'S NO CONTAMINATION FROM</p> <p>26 OUR LABORATORY.</p> <p>27 Q LET ME ASK YOU ABOUT THIS. FROM WHEN THESE</p> <p>28 PRODUCTS WERE MANUFACTURED -- YOU SAID SOME ARE OLDER.</p>	<p style="text-align: right;">Page 1757</p> <p>1 WHO BUY STUFF ON EBAY WOULD GET THESE SAMPLES.</p> <p>2 IT IS VERY IMPROBABLE THAT SOMETHING LIKE THAT</p> <p>3 HAPPENED.</p> <p>4 Q AND FOR, FOR INSTANCE, SO THOSE ARE ALL THE</p> <p>5 STEPS THAT WOULD HAVE TO HAPPEN FOR SOMEONE TO</p> <p>6 INTENTIONALLY TRY TO PUT TREMOLITE ASBESTOS IN ALL OF</p> <p>7 THESE DIFFERENT --</p> <p>8 A WELL, NOT JUST PUT IT IN BUT PUT IT IN THAT --</p> <p>9 SAY IF I FOUND ONE OF THESE SAMPLES THAT HAD 2 PERCENT</p> <p>10 TREMOLITE IN IT, I WOULD BE VERY SUSPICIOUS OF THAT.</p> <p>11 THAT IS SUCH AN OUTLIER OF WHAT WE ARE FINDING IN HERE.</p> <p>12 IT WOULD -- TO ME IT WOULD BE IMPOSSIBLE TO DO THAT.</p> <p>13 Q ALL RIGHT. AND, AGAIN, NOW HAVING HAD --</p> <p>14 THE COURT: IS THIS A GOOD PLACE TO TAKE A</p> <p>15 BREAK?</p> <p>16 MR. PANATIER: YEAH, SURE.</p> <p>17 THE COURT: OKAY. LET'S TAKE A BREAK. WE'LL</p> <p>18 TAKE A 15-MINUTE RECESS. REMEMBER THE ADMONITION. DO</p> <p>19 NOT FORM OR EXPRESS AN OPINION OR DISCUSS THIS MATTER</p> <p>20 WITH ANYONE. LET'S ACTUALLY MAKE IT 14 MINUTES. IT'S</p> <p>21 10:46 ACCORDING TO THE COMPUTER. WE'LL BE BACK AT</p> <p>22 11:00. I HAVE A MEETING AT NOONTIME, SO I HAVE TO LEAVE</p> <p>23 AT 11:45. SO WE'RE GOING TO STOP AT 11:45 TODAY, AND</p> <p>24 THEN WE'RE GOING TO COME BACK AT 1:45 BECAUSE THE</p> <p>25 MEETING IS OFF SITE. SO JUST TO MAKE SURE WE'RE BACK IN</p> <p>26 TIME. SO YOU'RE GOING TO HAVE A TWO-HOUR LUNCH BREAK,</p> <p>27 SO I'LL SEE YOU BACK AT 11:00.</p> <p>28</p>
<p style="text-align: right;">Page 1756</p> <p>1 SOME ARE NEWER.</p> <p>2 AS A SCIENTIST, WHAT WOULD IT TAKE -- WHAT</p> <p>3 WOULD IT TAKE TO ACTUALLY PUT ASBESTOS IN THEM IN THE</p> <p>4 WAY THAT YOU, GOING FORWARD, IN THE WAY THAT YOU HAVE</p> <p>5 DISCOVERED?</p> <p>6 A WELL, FIRST YOU'D HAVE TO GET A SOURCE OF</p> <p>7 FAIRLY RARE ASBESTOS. IT'S NOT A COMMERCIAL ASBESTOS,</p> <p>8 TREMOLITE. SO YOU WOULD HAVE TO KNOW THAT YOU COULD GO</p> <p>9 TO THE NATIONAL INSTITUTES OF STANDARDS AND TECHNOLOGY</p> <p>10 AND BUY THAT KNOWN SAMPLE.</p> <p>11 THEN YOU, OF COURSE -- WE'LL GET PAST THE FACT</p> <p>12 THAT NOW YOU HAVE DETERMINED HOW TO GET THE MATERIAL OUT</p> <p>13 OF THE CONTAINER OR AN EMPTY ONE AND SOMEHOW OPEN IT UP</p> <p>14 SO THAT OUR FORENSIC ENGINEERS AT OUR LABORATORY CAN'T</p> <p>15 TELL.</p> <p>16 THEN YOU WOULD HAVE TO KNOW TO GO GET COSMETIC</p> <p>17 SIZE TALC. SO YOU WOULD HAVE TO HAVE A SOURCE OF TALC,</p> <p>18 I GUESS, OFF THE SHELF. THEN YOU WOULD HAVE TO KNOW ON</p> <p>19 WHAT AMOUNT OF TREMOLITE DO I PUT IN THIS CONTAINER SO</p> <p>20 THAT I GET IT IN THE RANGE THAT IS EXPECTED TO BE FOUND</p> <p>21 THAT OTHERS HAVE FOUND. AND THIS RANGE HAS TO BE</p> <p>22 ANYWHERE FROM MAYBE 2,000THS OF A PERCENT TO A HUNDRED</p> <p>23 THOUSANDTHS OF A PERCENT. YOU HAVE TO DISTRIBUTE IT.</p> <p>24 YOU'D HAVE TO BE ABLE TO THEN, AFTER YOU PUT</p> <p>25 IT IN THERE, MEASURE IT USING AN ANALYTICAL TRANSMISSION</p> <p>26 ELECTRON MICROSCOPE SO THAT YOU COULD VERIFY THAT THIS</p> <p>27 IS IN THIS RANGE. THEN YOU WOULD HAVE TO DETERMINE HOW</p> <p>28 TO DISTRIBUTE IT AROUND THE COUNTRY SO THAT LAW FIRMS</p>	<p style="text-align: right;">Page 1758</p> <p>1 (THE JURORS EXITED THE COURTROOM.)</p> <p>2 (THE FOLLOWING PROCEEDINGS WERE HELD</p> <p>3 OUTSIDE THE PRESENCE OF THE JURY:)</p> <p>4</p> <p>5 THE COURT: WE WILL BE IN RECESS FOR 14</p> <p>6 MINUTES.</p> <p>7</p> <p>8 (RECESS TAKEN.)</p> <p>9</p> <p>10 (THE JURY ENTERED THE COURTROOM.)</p> <p>11 (THE FOLLOWING PROCEEDINGS WERE HELD IN</p> <p>12 OPEN COURT IN THE PRESENCE OF THE JURY:)</p> <p>13</p> <p>14 THE COURT: EVERYONE MAY BE SEATED. WE'LL</p> <p>15 CONTINUE WITH THE JURY TRIAL. ALL PARTIES ARE PRESENT.</p> <p>16 JURORS AND ALTERNATES ARE PRESENT.</p> <p>17 MR. PANATIER, YOU MAY CONTINUE WITH YOUR</p> <p>18 DIRECT EXAMINATION.</p> <p>19 MR. PANATIER: THANK YOU, YOUR HONOR.</p> <p>20 BY MR. PANATIER:</p> <p>21 Q SO A FEW THINGS BEFORE WE MOVE ON AND THEN WE</p> <p>22 CAN DISCUSS SOME OF THESE RESULTS. YOU TALKED ABOUT THE</p> <p>23 PIERCE PAPER, AND I WANT TO MAKE SURE I'M TALKING ABOUT</p> <p>24 THE RIGHT PAPER. THIS WAS "EVALUATION OF THE PRESENCE</p> <p>25 OF ASBESTOS IN COSMETIC TALCUM PRODUCTS."</p> <p>26 IS THIS THE PAPER YOU WERE REFERRING TO WHERE</p> <p>27 THEY HAD THE HISTORICAL SAMPLE, HAD TO DRILL INTO IT?</p> <p>28 A YES.</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

20 (Pages 1759 to 1762)

Page 1759	Page 1761
<p>1 Q AND THEN THERE'S THIS ONE, "ASSESSMENT OF 2 HEALTH RISK FROM HISTORICAL USE OF COSMETIC TALCUM 3 POWDER" BY ANDERSON, SHEEHAN, KALMS AND GRIFFIN. THIS 4 IS FROM 2016. HAVE YOU READ AND RELIED UPON THIS? 5 A I'D READ IT. SOME PARTS I THINK ARE 6 AUTHORITATIVE. SOME I DON'T. 7 Q WELL, LET ME ASK YOU THIS: FOR THE 8 PROPOSITION THAT SCIENTISTS, NOT INCLUDING YOURSELF, 9 HAVE LOOKED AT HISTORICAL CONTAINERS OF COSMETIC TALC TO 10 RENDER OPINIONS. 11 A YES. 12 Q SAME QUESTION FOR THIS ONE BY ILGREN, SARTORIO 13 AND HOSKINS, "ANALYSIS OF AN AUTHENTIC HISTORICAL 14 ITALIAN COSMETIC TALC SAMPLE -- FURTHER EVIDENCE FOR 15 LACK OF CANCER RISK." AND HAVE YOU READ THIS? 16 A I HAVE. 17 Q AND THAT'S BY EDWARD ILGREN. DO YOU KNOW WHO 18 THAT IS? 19 A I DON'T THINK I'VE EVER MET HIM, BUT I KNOW 20 HIM. I KNOW HIS WORK. 21 Q WE'RE NOT GOING TO GET SO MUCH INTO HIS WORK, 22 BUT DO YOU RELY UPON THIS FOR THE PROPOSITION THAT OTHER 23 SCIENTISTS LOOK AT THE HISTORICAL CONTAINERS AND DRAW 24 CONCLUSIONS FROM THEM? 25 A YES. 26 Q SO LET'S TALK A LITTLE BIT ABOUT WHAT YOU DID 27 TO FURTHER ENSURE WHAT YOU WERE LOOKING AT WAS WHAT YOU 28 THOUGHT YOU WERE LOOKING AT. THIS IS PARTICLE SIZE</p>	<p>1 SIZE DISTRIBUTION IN THE SAMPLES YOU RECEIVED AND TESTED 2 AND IN THE CONTROL SAMPLE? 3 A YES. THE SEM DOES IT. IT'S AUTOMATED. SO IF 4 YOU SAT THERE AND DID THAT ON EVERY PARTICLE, THAT 5 PROJECT MAY TAKE YOU A YEAR. 6 Q YOU SAID IT WAS AUTOMATED? 7 A RIGHT. WE PUT THE SAMPLE IN AND WE VALIDATED 8 THAT, THESE LITTLE PARTICLES, LITTLE MICROSPHERES THAT 9 WE KNOW THE SIZE OF, TO MAKE SURE IT'S DOING IT 10 CORRECTLY. AND THEN YOU PUT IT IN. THERE'S A SAMPLE. 11 YOU CAN SEE LARGER SIZE AND SMALLER SIZE, AND IT GOES 12 THROUGH RANDOMLY, STOPS, MEASURES IT, AND MOVES ON. 13 Q DID YOU COMPARE THE CONTROL SAMPLE FROM THE 14 OFF-THE-SHELF JOHNSON'S BABY POWDER WITH THE SAMPLES YOU 15 HAD TO SEE IF THE PARTICLE SIZE DISTRIBUTIONS MATCHED? 16 A YEAH. THEY WERE ALL IN THE SAME SIZE RANGE. 17 THIS HISTOGRAM WAS WHAT EVERY ONE OF THEM LOOKED LIKE. 18 SO THEY WERE SUBSTANTIALLY SIMILAR LOOKING AT -- YOU 19 KNOW, THIS IS ALL FROM THE SAME TYPE OF PROCESS. 20 Q OKAY. AND HAVE YOU RELIED UPON PUBLICATIONS 21 THAT HAVE DISCUSSED WHETHER OR NOT PARTICLE SIZE 22 DISTRIBUTIONS FOR DIFFERENT BRANDS ARE DIFFERENT? 23 A YES. 24 Q AND I JUST WANT TO SHOW ONE OF THOSE. THAT'S 25 THIS ONE. IT'S THIS PAPER BY ZAZENSKI, "TALC: 26 OCCURRENCE, CHARACTERIZATION, AND CONSUMER 27 APPLICATIONS." 28 THIS IS THE CALL OUT. "THE PARTICLE SIZE OF</p>
Page 1760	Page 1762
<p>1 DISTRIBUTION. WHAT IS THIS? 2 A THIS IS A HISTOGRAM OF THE SIZE DISTRIBUTION 3 FOR THE SAMPLES THAT WE ANALYZED IN OUR NEW FIELD 4 EMISSION SCANNING ELECTRON MICROSCOPE WHERE THE 5 MICROSCOPE WAS CALIBRATED TO MEASURE EXACTLY THE AVERAGE 6 DIAMETER OR SIZE OF THE PARTICLES. 7 SO WE PREPARE A SAMPLE AND THEN WE HAVE IT 8 ANALYZED IN SIZE -- 5,000 RANDOM PARTICLES FROM EACH OF 9 THESE SAMPLES, AND THEN COMPARE THEIR SIZE. UNDER THE 10 PROPOSITION, IF THESE ARE ALL DIFFERENT, YOU SHOULD HAVE 11 DIFFERENCES THAT YOU CAN TELL IN SIZE. IF THEY COME 12 FROM THE SAME MANUFACTURER USING THE TYPES OF MILLS AND 13 SPECIFICATIONS, THEY SHOULD BE PRETTY CLOSE. 14 Q OKAY. SO IT SAYS PARTICLE SIZE DISTRIBUTION 15 VERSUS CONTROL SAMPLE. SO WHAT WAS THAT? 16 A CONTROL SAMPLE WAS AN OFF-THE-SHELF JOHNSON'S 17 BABY POWDER SAMPLE THAT THERE'S NO DISPUTE WHERE IT CAME 18 FROM. 19 Q ALL RIGHT. AND SO DID YOU COMPARE THAT, THE 20 PARTICLE SIZE DISTRIBUTION FOR THAT VERSUS THE SAMPLES 21 THAT YOU HAD? 22 A YES. 23 Q OKAY. AND IT SAYS HERE, "5,000 PARTICLES 24 MINIMUM ANALYZED PER SAMPLE BY SEM." DOES THAT MEAN IT 25 ACTUALLY MEASURED 5,000 PARTICLES? 26 A SOMEWHERE BETWEEN 5,000 AND 10,000, YES. 27 Q AND SO DID YOU ACTUALLY GO THROUGH THAT 28 EXERCISE OF HAVING THE SEM ANALYZED FOR THE PARTICLE</p>	<p>1 THE TALC RAW MATERIAL USED IN THESE PRODUCTS VARIES 2 WIDELY BY PRODUCT TYPE AND MANUFACTURER"; IS THAT RIGHT? 3 A THAT'S WHAT IT SAYS. 4 Q AND LASTLY, BEFORE WE GET TO THE RESULTS, THIS 5 IS BY DR. RIGLER, QC ANALYSIS. CAN YOU TELL US WHAT 6 THAT IS? 7 A OH, THESE SAMPLES THAT WE ANALYZE THE TALC, WE 8 GO BACK AND REANALYZE THEM BY DIFFERENT ANALYSTS. WE 9 ALSO DO -- AND LOOK AT THE BLANKS SO THAT WHEN ONE 10 ANALYST SAYS THIS IS WHAT WE FOUND, WE QUALITY CONTROL 11 IT TO SEE IF HE IS CONSISTENT WITH EITHER HIS 12 REANALYZING IT. AND WHEN THEY REANALYZE IT, THEY DON'T 13 KNOW THEY'RE REANALYZING THEIR SAMPLE. 14 AND THEN WE'LL DO A REPLICATE WHERE ANOTHER 15 ANALYST -- AND THEN EVEN RE-PREP THE SAMPLE FOR ANOTHER 16 ANALYST. 17 AND ALSO FOR EVERY ONE SET OF THESE SAMPLES WE 18 RAN A PROCESS BLANK BECAUSE WE WANTED TO MAKE SURE 19 NOTHING THAT WE DID ADDED ANY OF THESE ASBESTOS IF IT'S 20 BOUND TO THE SAMPLE. MEANING YOU DO EVERYTHING THE 21 SAME, HEAVY LIQUID, SPIN IT, FILTER IT, BUT YOU DON'T 22 ADD THE TALC. 23 SO YOU MAKE SURE THERE IS NOTHING IN ANY OF 24 THE REAGENTS WE'RE USING, ANY OF THE HANDLING. NOTHING 25 SHOWS THAT -- SO THAT WHAT WE FIND IN THE SAMPLE IS 26 ACTUALLY FROM THE SAMPLE AND SOMEHOW NOT 27 CROSS-CONTAMINATED IN OUR LABORATORY. 28 Q AND SO IS THIS THE QC PROCEDURE THAT YOUR LAB</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

21 (Pages 1763 to 1766)

Page 1763	Page 1765
<p>1 HAS HAD FOR HOW MANY YEARS?</p> <p>2 A SINCE WE STARTED GETTING CERTIFIED. EVEN</p> <p>3 BEFORE THAT.</p> <p>4 Q AND THEN ONE OTHER THING I WANTED TO ASK ABOUT</p> <p>5 IS WE TALKED ABOUT THE FACT THAT IN 1980 THERE WAS A</p> <p>6 BRIEF PERIOD OF TIME WHERE THERE WAS ITALIAN AND THEN</p> <p>7 YOU HAD TESTED A LOT OF THE EARLIER ITALIAN.</p> <p>8 CAN YOU TELL US TO A REASONABLE DEGREE OF</p> <p>9 SCIENTIFIC CERTAINTY IF WE CAN RELY UPON THE EARLIER</p> <p>10 TESTING OF THE ITALIAN BOTTLES THAT YOU HAD FOR</p> <p>11 APPLICATION TO THE 1980 PERIOD?</p> <p>12 A YES. I CAN SAY THAT WITHIN A REASONABLE</p> <p>13 DEGREE OF SCIENTIFIC CERTAINTY, BECAUSE IT'S COMING FROM</p> <p>14 THE SAME MINE. THE MINE DOESN'T CHANGE THAT MUCH. JUST</p> <p>15 THE PROCESS OF HOW THEY DIG IT. SO YOU'RE COMING FROM</p> <p>16 THE SAME SOURCE. SO YOU WOULD EXPECT THE SAME TYPES OF</p> <p>17 CONTAMINATION IN 1980 AS WE HAD PRE-1980.</p> <p>18 Q AND WITHOUT GETTING INTO WHAT THE ACTUAL</p> <p>19 RESULTS WERE YET FOR THE SEVERAL DECADES OF ITALIAN THAT</p> <p>20 YOU HAD BEFORE THE END OF THE 1960S, DID YOU HAVE</p> <p>21 RESULTS THAT WERE CONSISTENT SCIENTIFICALLY DURING THAT</p> <p>22 PERIOD OF TIME EVEN FOR A SEVERAL-DECADE PERIOD?</p> <p>23 A WELL, SOME OF THEM WERE HIGHER, SOME WERE</p> <p>24 LOWER. SOME OF THE SAMPLES WE DIDN'T FIND ANY -- NO</p> <p>25 DETECTABLE ASBESTOS STRUCTURES. SO IT JUST DEPENDS ON</p> <p>26 EACH BOTTLE.</p> <p>27 Q AND AS FOR THE SIZE DISTRIBUTION, WERE THEY</p> <p>28 ALL CONSISTENT?</p>	<p>1 WE CAN ORIENT OURSELVES, OVER ON THE LEFT WE HAVE SAMPLE</p> <p>2 ID NUMBERS. WERE THOSE ID NUMBERS THAT MAS PROVIDED SO</p> <p>3 WE CAN TRACE THESE THROUGH THE TESTING?</p> <p>4 A YES, THAT'S OUR STANDARD PROTOCOL. SO MAS IS</p> <p>5 30 YEARS OLD. THE FIRST MAS NUMBER FROM THE VERY FIRST</p> <p>6 SAMPLE THAT CAME IN WAS M100. SO YOU CAN SEE NOW THAT</p> <p>7 WE HAVE OVER 66,000 SEPARATE PRODUCTS, AND THAT DOESN'T</p> <p>8 MEAN 66,000, BECAUSE YOU CAN HAVE -- YOU CAN HAVE A</p> <p>9 HUNDRED SAMPLES IN ONE.</p> <p>10 SO ANYTIME A SAMPLE COMES IN THE DOOR, WE</p> <p>11 ASSIGN IT A UNIQUE LABORATORY TRACKING NUMBER. SO JUST</p> <p>12 SORT OF TRIVIA. NOW WE'RE OVER 66,000 SAMPLES.</p> <p>13 Q SO LET ME --</p> <p>14 YOUR HONOR, CAN I APPROACH?</p> <p>15 THE COURT: YES.</p> <p>16 BY MR. PANATIER:</p> <p>17 Q SO I THINK WE MIGHT HAVE AN EXAMPLE HERE WHERE</p> <p>18 IT LOOKS LIKE THERE WERE TWO SAMPLES TAKEN OF ONE</p> <p>19 BOTTLE.</p> <p>20 A CORRECT.</p> <p>21 Q IS THAT FAIR?</p> <p>22 A THAT'S FAIR.</p> <p>23 Q AND ON THAT ONE, WHY WERE THERE TWO SAMPLES</p> <p>24 DONE ON THAT ONE?</p> <p>25 A I BELIEVE THAT'S THE HISTORICAL SAMPLE. AND</p> <p>26 TWO SAMPLES WERE TAKEN BECAUSE WHEN JOHNSON & JOHNSON,</p> <p>27 WHAT I CALL PRODUCED THE SAMPLE, THEY PRODUCED A BOTTLE</p> <p>28 THAT THEY SAID WAS 1978. AND THE LABORATORY THAT THEY</p>
Page 1764	Page 1766
<p>1 A YES.</p> <p>2 MR. PANATIER: OKAY. YOUR HONOR, I THINK THE</p> <p>3 NEXT CHAPTER IS THE RESULTS. SHOULD WE APPROACH</p> <p>4 SIDEBAR?</p> <p>5 THE COURT: YES. APPROACH SIDEBAR.</p> <p>6</p> <p>7 (THE FOLLOWING DISCUSSION WAS HELD AT</p> <p>8 SIDEBAR OUTSIDE THE PRESENCE OF THE JURY:)</p> <p>9 THE COURT: I THINK THERE ARE STILL A COUPLE</p> <p>10 QUESTIONS, BUT I THINK THOSE CAN BE HANDLED ON</p> <p>11 CROSS-EXAMINATION. SO I THINK AN ADEQUATE FOUNDATION</p> <p>12 HAS BEEN LAID. I'LL HEAR FROM MR. BAILEY.</p> <p>13 MR. BAILEY: I'LL JUST RENEW MY OBJECTION.</p> <p>14 352. RELEVANCE. NO FOUNDATION.</p> <p>15 THE COURT: I'M GOING TO OVERRULE ON THOSE</p> <p>16 GROUNDS.</p> <p>17</p> <p>18 (END OF SIDEBAR DISCUSSION.)</p> <p>19</p> <p>20 BY MR. PANATIER:</p> <p>21 Q ALL RIGHT. SO, DR. LONGO, LET'S CHAT A LITTLE</p> <p>22 BIT ABOUT THIS. YOU'VE LOOKED AT HOW MANY TOTAL SAMPLES</p> <p>23 UP TO THIS DATE?</p> <p>24 A TO THIS DATE, 36 SAMPLES.</p> <p>25 Q AND OF THOSE 36, HOW MANY WERE POSITIVE FOR</p> <p>26 ASBESTOS?</p> <p>27 A TWENTY OF THEM.</p> <p>28 Q TWENTY OF 36. OKAY. AND OVER ON -- JUST SO</p>	<p>1 CHOSE DIDN'T HAVE CONTAINERS BIG ENOUGH FOR THE SAMPLE</p> <p>2 WE WERE TO RECEIVE. SO THEY PUT IT IN TWO.</p> <p>3 Q SO DID YOU TEST EACH OF THE LITTLE CONTAINERS?</p> <p>4 A YES.</p> <p>5 Q AND THAT'S WHY WE HAVE UNDER "CONCENTRATION"</p> <p>6 NOW -- IT SAYS "CONCENTRATION UP AT THE TOP." CAN YOU</p> <p>7 TELL US WHAT THAT WAS THAT YOU'RE INDICATING?</p> <p>8 A THAT'S HOW MANY ASBESTOS FIBERS. AND I SAY</p> <p>9 FIBERS. WE DID INCLUDE BUNDLES. I THINK HALF OR A</p> <p>10 LITTLE BIT MORE WERE BUNDLES. THAT'S HOW MANY FIBERS OR</p> <p>11 BUNDLES OF ASBESTOS WERE IN EACH GRAM OF MATERIAL THAT</p> <p>12 WE TESTED.</p> <p>13 SO WE TAKE A VERY SMALL -- WE TAKE A SAMPLE</p> <p>14 OUT. WE GO THROUGH THE HEAVY DENSITY LIQUID SEPARATION</p> <p>15 PROCESS. WE THEN TAKE THE SAND IN THE BOTTOM OF THE</p> <p>16 CENTRIFUGE TUBE AND THEN PREPARE IT FOR TRANSMISSION</p> <p>17 ELECTRON MICROSCOPY ANALYSIS.</p> <p>18 THEN WE COUNT IT -- PRESENT HOW MANY ARE</p> <p>19 ASBESTOS. AND THEN TEM, YOU DO EXTRAPOLATION. YOU</p> <p>20 CAN'T ANALYZE 15 MILLION FIBERS.</p> <p>21 Q WELL, THAT'S WHAT I WAS GOING TO ASK YOU.</p> <p>22 WHEN YOU SAY THERE'S -- LET'S PICK ONE. 9,120 FIBERS</p> <p>23 PER GRAM IN 6620306; RIGHT?</p> <p>24 SOMEONE ISN'T SITTING THERE GOING 1, 2, 3, 4,</p> <p>25 ALL THE WAY TO 9,000, ARE THEY?</p> <p>26 A NO. TO ANALYZE 9,000 FIBERS IN THE</p> <p>27 TRANSMISSION ELECTRON MICROSCOPE, WHERE YOU HAVE TO DO</p> <p>28 IT, WHERE YOU IDENTIFY IT, IT MIGHT TAKE YOU SEVEN,</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

22 (Pages 1767 to 1770)

Page 1767	Page 1769
<p>1 EIGHT MONTHS.</p> <p>2 Q SO HOW CAN YOU TAKE A SMALLER SAMPLE AND</p> <p>3 SCIENTIFICALLY SAY WE KNOW TO A REASONABLY DEGREE OF</p> <p>4 SCIENTIFIC CERTAINTY WHAT THE ACTUAL CONCENTRATION IS</p> <p>5 PER GRAM? HOW CAN YOU DO THAT?</p> <p>6 A BECAUSE YOU TAKE A RANDOM SAMPLE OUT OF IT.</p> <p>7 WE'RE NOT ANALYZING A GRAM. WE'RE TYPICALLY -- IN THE</p> <p>8 HEAVY DENSITY SEPARATION, WE'RE USING ABOUT</p> <p>9 25 MILLIGRAMS.</p> <p>10 Q 25 MILLIGRAMS, WOULD THAT BE 25,000THS OF A</p> <p>11 GRAM?</p> <p>12 A YES.</p> <p>13 Q ALL RIGHT. AND THEN YOU'RE ABLE TO TAKE THAT</p> <p>14 RESULT AND SAY THIS IS WHAT THE CONCENTRATION WOULD BE</p> <p>15 FOR A WHOLE GRAM; IS THAT FAIR?</p> <p>16 A THAT'S FAIR.</p> <p>17 Q OKAY.</p> <p>18 A THAT'S HOW ALL TRANSMISSION ELECTRON</p> <p>19 MICROSCOPY WORKS. WHEN YOU TAKE AN AIR SAMPLE FOR</p> <p>20 ASBESTOS IN THE AIR, YOU'RE NOT SAMPLING ALL THE AIR IN</p> <p>21 THIS ROOM. CAN'T DO THAT. YOU TAKE A SAMPLE AND YOU</p> <p>22 MIGHT SAY THIS ROOM HAS APPROXIMATELY 30,000 CUBIC FEET</p> <p>23 OF AIR IN IT. NOW, IF YOU MULTIPLY IT BY 28, THAT WILL</p> <p>24 GIVE YOU HOW MANY LITERS OF AIR.</p> <p>25 SOMEBODY COMING IN HERE AND MAKING A</p> <p>26 DETERMINATION IF THERE'S ASBESTOS IN THE AIR MAY COLLECT</p> <p>27 200 LITERS OF AIR OR A THOUSAND LITERS OF AIR, NOT THE</p> <p>28 MILLION LITERS OF AIR THAT ARE IN THIS ROOM. THAT'S HOW</p>	<p>1 A YES.</p> <p>2 Q AND YOU SAID RICHTERITE WAS SIMILAR TO</p> <p>3 TREMOLITE?</p> <p>4 MR. BAILEY: OBJECTION, YOUR HONOR. LEADING.</p> <p>5 THE COURT: OVERRULED.</p> <p>6 THE WITNESS: YES. IF YOU -- RICHTERITE IS A</p> <p>7 TREMOLITE. IT'S CALLED A SOLID SOLUTION SERIES.</p> <p>8 BY MR. PANATIER:</p> <p>9 Q A SOLID SOLUTION SERIES?</p> <p>10 A YES. WHEN IT'S FORMED, YOU CAN HAVE</p> <p>11 SUBSTITUTIONS OF ELEMENTS. SO YOU CAN HAVE A TREMOLITE</p> <p>12 CHEMISTRY, BUT WHEREVER IT FORMED IN THE GROUND, IF</p> <p>13 THERE'S A LITTLE BIT OF SODIUM OR A LITTLE BIT OF</p> <p>14 POTASSIUM, IT CAN GET INCORPORATED INTO THE FIBER. THEN</p> <p>15 YOU CALL IT RICHTERITE AND WINCHITE.</p> <p>16 THEY'RE TAKING -- IT USED TO ALL BE CALLED</p> <p>17 TREMOLITE. NOW THEY GET A LITTLE BIT MORE SPECIFIC ON</p> <p>18 SOME MINOR CHEMISTRY CHANGES.</p> <p>19 Q AND THEN YOU ALSO HAVE A COLUMN FOR "ASPECT."</p> <p>20 IS THAT THE ASPECT RATIO THAT WE'VE TALKED ABOUT UNDER</p> <p>21 AHERA, WHERE IT SAID YOU HAD TO HAVE AT LEAST 5 TO 1?</p> <p>22 A THIS IS THE AVERAGE.</p> <p>23 Q OKAY.</p> <p>24 A SO THIS TOOK ALL THE FIBERS OR BUNDLES WE</p> <p>25 FOUND AND AVERAGED OUT THE ASPECT RATIO OF IT. SO I</p> <p>26 THINK OUT OF THE 270 FIBERS, I BELIEVE ONE IN THERE IS</p> <p>27 LESS THAN FIVE. IT'S LIKE 4.8.</p> <p>28 Q OKAY. AND SO THAT TELLS US OVER THERE, WERE</p>
Page 1768	Page 1770
<p>1 IT'S ALL DONE.</p> <p>2 WHEN SOMEBODY DETERMINES THAT YOU HAVE LEAD IN</p> <p>3 THE DRINKING WATER, YOU DON'T MEASURE ALL THE DRINKING</p> <p>4 WATER THAT'S COMING OUT OF THE RESERVOIR. YOU CAN'T DO</p> <p>5 THAT. YOU MEASURE DISCRETE SAMPLES BECAUSE IT'S</p> <p>6 HOMOGENOUS.</p> <p>7 AND THE SAME THING WITH TEM. WE ANALYZE A</p> <p>8 SMALL PORTION AND THEN WE SAY, OKAY, THIS IS WHAT WE</p> <p>9 FOUND. THIS IS HOW MUCH MATERIAL IS ON MY FILTER. AND</p> <p>10 IF I HAVE TEN FIBERS IN 1 MILLIGRAM AND IT CAME OUT OF</p> <p>11 THIS SAMPLE THAT HAS, SAY, 100, 200 GRAMS, THEN YOU</p> <p>12 EXTRAPOLATE BACK WHAT'S IN THAT MATERIAL. THAT'S HOW</p> <p>13 ALL ANALYTICAL CHEMISTRY IS DONE, EVEN MICROSCOPY.</p> <p>14 Q ALL RIGHT. AND THEN LET'S GO OVER TO THE</p> <p>15 FIBER TYPE. GOING BACK TO OUR INITIAL DISCUSSION OVER</p> <p>16 WHAT TYPE OF FIBER WAS THE BLOUNT METHOD SORT OF</p> <p>17 PREFERENTIALLY GEARED TOWARDS, DO THESE FIBER TYPES KIND</p> <p>18 OF BEAR THAT OUT?</p> <p>19 A CORRECT. SOME OF THE ANTHOPHYLLITE WE FOUND</p> <p>20 IS IRON-RICH. I THINK WE MAY HAVE ONE THAT'S LOW IN</p> <p>21 IRON, BUT THE REST OF IT YOU COULD SEE IS EITHER</p> <p>22 TREMOLITE. YOU SEE RICHTERITE. THAT'S ANOTHER FORM OF</p> <p>23 TREMOLITE. IT HAS A LITTLE DIFFERENT CHEMISTRY. AND</p> <p>24 ACTINOLITE AND RICHTERITE AND TREMOLITE. SO THAT'S THE</p> <p>25 MAJORITY OF WHAT WE'RE FINDING BECAUSE IT'S THE HEAVY</p> <p>26 DENSITY METHOD.</p> <p>27 Q OKAY. AND SO UP AT THE TOP THERE'S TWO THAT</p> <p>28 ARE "TREMOLITE/R." IS THAT RICHTERITE?</p>	<p>1 ALL OF THESE COUNTABLE FIBERS UNDER AHERA PROTOCOL --</p> <p>2 THAT'S A FEDERAL LAW?</p> <p>3 A YES. THESE ARE ALL -- EXCEPT FOR THE 4.8 WAS</p> <p>4 A JUDGMENT CALL. BUT EVERY OTHER ONE,</p> <p>5 260-SOME-INDIVIDUAL ASBESTOS FIBERS AND BUNDLES, ALL OF</p> <p>6 THEM WERE GREATER THAN 5-TO-1 ASPECT RATIO, PARALLEL</p> <p>7 SIDES, GREATER THAN 5 MICROMETERS IN LENGTH. ALL MET</p> <p>8 THE DEFINITION OF NOT ONLY OF AHERA BUT THE ASTM</p> <p>9 DEFINITION FOR TEM WHAT A FIBER IS, WHAT THE</p> <p>10 INTERNATIONAL STANDARDS ORGANIZATION DEFINITION OF A</p> <p>11 FIBER ON TEM, THE ASTM DEFINITION STANDARD.</p> <p>12 THEY ALL USE THIS STANDARD FOR TRANSMISSION</p> <p>13 ELECTRON MICROSCOPY. IT'S NOT JUST AHERA. IT'S A</p> <p>14 COMMON METHODOLOGY THAT ALL OF THESE PROTOCOLS USE FOR</p> <p>15 TRANSMISSION ELECTRON MICROSCOPY FOR THESE TYPES OF</p> <p>16 ANALYSIS.</p> <p>17 Q WELL, LET ME ASK YOU. DO ANY OF THESE TEM</p> <p>18 METHODOLOGIES GO INTO OR CARE HOW THE ACTUAL FIBERS GREW</p> <p>19 IN THE GROUND?</p> <p>20 A NO.</p> <p>21 MR. BAILEY: OBJECTION, YOUR HONOR. CALLS FOR</p> <p>22 SPECULATION.</p> <p>23 THE COURT: THE ANSWER WAS NO. I'M GOING TO</p> <p>24 OVERRULE THE OBJECTION. THE ANSWER WILL REMAIN.</p> <p>25 BY MR. PANATIER:</p> <p>26 Q AND, DR. LONGO, I WANT TO ASK YOU IF THIS IS</p> <p>27 ONE OF THE DOCUMENTS YOU HAD REVIEWED LAST SUMMER. THIS</p> <p>28 IS EXHIBIT 577. BUT DO YOU SEE THIS?</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

23 (Pages 1771 to 1774)

Page 1771	Page 1773
<p>1 A YES.</p> <p>2 Q HAVE YOU REVIEWED THAT DOCUMENT?</p> <p>3 A I HAVE.</p> <p>4 Q OKAY. AND THIS IS JOHNSON & JOHNSON 1977.</p> <p>5 AND THEY DEFINE ASBESTOS, DO THEY NOT?</p> <p>6 A THEY DO.</p> <p>7 Q ASBESTOS IS DEFINED TO BE "THE FIBROUS</p> <p>8 SERPENTINE CHRYSOTILE AND THE FIBROUS FORMS OF THE</p> <p>9 AMPHIBOLE GROUP AS REPRESENTED BY AMOSITE,</p> <p>10 ANTHOPHYLLITE, CROCIDOLITE, TREMOLITE ASBESTOS, AND</p> <p>11 ACTINOLITE."</p> <p>12 A CORRECT.</p> <p>13 Q IS THAT COMPLETELY CONSISTENT WITH THESE TEM</p> <p>14 METHODS?</p> <p>15 A YES. WE'RE DEFINING WHAT IS FIBROUS.</p> <p>16 Q AND, IN FACT, HERE IT SAYS "ASBESTIFORM</p> <p>17 MINERALS," AND THEN IN PARENTHESIS "FIBROUS FORMS."</p> <p>18 YOU'VE REVIEWED THAT?</p> <p>19 A I HAVE.</p> <p>20 Q OKAY. AND IS THAT WHAT THESE TEM METHODS ARE</p> <p>21 CONCERNED WITH LOOKING AT?</p> <p>22 A THEY'RE CONCERNED OF LOOKING AT WHAT IS</p> <p>23 FIBROUS -- WELL, BASED ON THESE HEALTH AND SAFETY</p> <p>24 PROTOCOLS, IT'S WHAT IS FIBROUS. THEY DO NOT REQUIRE</p> <p>25 YOU TO GO BACK AND DETERMINE ANYTHING ABOUT THE MINE, IN</p> <p>26 MY OPINION.</p> <p>27 Q OKAY. ALL RIGHT. AND THEN I'VE JUST LISTED</p> <p>28 THIS SUMMARY OF THE DIFFERENT PROTOCOLS. UNDER ALL OF</p>	<p>1 MINERALS BY TEM"? DO YOU SEE THAT?</p> <p>2 A YES.</p> <p>3 Q AND THIS IS THE ONE YOU'VE REVIEWED?</p> <p>4 A I HAVE.</p> <p>5 Q THIS DATE IS 1995; CORRECT?</p> <p>6 A CORRECT.</p> <p>7 Q AND DOES IT ALSO TELL YOU HOW TO -- WHAT YOUR</p> <p>8 COUNTING PROTOCOL IS?</p> <p>9 A IT DOES.</p> <p>10 Q AND I LEARNED YESTERDAY, I LEARNED TO NEVER</p> <p>11 USE PINK HIGHLIGHTER OVER YELLOW HIGHLIGHT AGAIN,</p> <p>12 BECAUSE IT ACTUALLY MAKES IT DISAPPEAR. SO I'M NOT</p> <p>13 GOING TO DO THAT HERE. BUT DOES IT TELL US WHAT THE</p> <p>14 DEFINITION OF A FIBER IS HERE, ACCORDING TO JOHNSON &</p> <p>15 JOHNSON?</p> <p>16 A IT DOES. THE DEFINITION OF FIBER, ELONGATED</p> <p>17 PARTICLE WITH PARALLEL SIDES WITH AN ASPECT RATIO</p> <p>18 GREATER THAN OR EQUAL TO 3-TO-1.</p> <p>19 Q SO THEY ACTUALLY DEFINE IT -- JOHNSON &</p> <p>20 JOHNSON ACTUALLY DEFINES IT AS EVEN SHORTER THAN THE TEM</p> <p>21 METHODOLOGY YOU USED?</p> <p>22 A YES.</p> <p>23 Q WE'RE GOING TO COME BACK. HAVE YOU STUDIED</p> <p>24 THE LEVEL OF SENSITIVITY OF JOHNSON & JOHNSON'S TEST</p> <p>25 METHOD?</p> <p>26 A I HAVE.</p> <p>27 Q WE'RE GOING TO COME BACK TO THAT RIGHT AT THE</p> <p>28 END. OKAY. SO WERE YOUR RESULTS CONSISTENT WITH ALICE</p>
Page 1772	Page 1774
<p>1 THESE DIFFERENT PROTOCOLS, OSHA, MSHA, EPA, U.S.</p> <p>2 GEOLOGICAL SURVEY, CALIFORNIA EPA, AND ALL THE TEM</p> <p>3 METHODOLOGIES, ARE THOSE FIBERS YOU FOUND ASBESTOS IN?</p> <p>4 A YES. THOSE ARE THE -- THOSE ARE THE</p> <p>5 DEFINITIONS OF WHAT -- WHEN YOU ANALYZE TO THESE METHODS</p> <p>6 OR THESE ORGANIZATIONS, IT MEETS THESE CRITERIA. YOU</p> <p>7 CALL IT A FIBER OR ASBESTOS.</p> <p>8 Q OKAY. AND UNDER THE DEFINITION, THE COUNTING</p> <p>9 PROTOCOL THEY GAVE YOU FOR EVALUATING HEALTH AND SAFETY,</p> <p>10 ARE THEY ASBESTOS?</p> <p>11 A YES.</p> <p>12 Q AND THEN WE ALREADY DID JOHNSON & JOHNSON'S</p> <p>13 DEFINITION. HAVE YOU REVIEWED JOHNSON & JOHNSON'S</p> <p>14 METHOD TM 7024?</p> <p>15 A I HAVE.</p> <p>16 Q OKAY. AND WHAT IS THAT?</p> <p>17 A THAT IS JOHNSON & JOHNSON'S OWN TRANSMISSION</p> <p>18 ELECTRON MICROSCOPY METHOD FOR THE DETERMINATION OF</p> <p>19 FIBERS IN ASBESTOS IN TALC.</p> <p>20 MR. PANATIER: OKAY. THIS IS EXHIBIT 931.</p> <p>21</p> <p>22 (PLAINTIFFS' EXHIBIT 931 MARKED FOR</p> <p>23 IDENTIFICATION.)</p> <p>24</p> <p>25 BY MR. PANATIER:</p> <p>26 Q WE'RE GOING TO TALK ABOUT THIS A LITTLE BIT</p> <p>27 NOW AND A LITTLE BIT LATER. BUT DO YOU SEE THAT THIS IS</p> <p>28 ENTITLED "ANALYSIS OF POWDERED TALC FOR ASBESTIFORM</p>	<p>1 BLOUNT?</p> <p>2 A YES.</p> <p>3 Q AND WERE YOUR RESULTS CONSISTENT, SIR, WITH --</p> <p>4 AND JUST TO BE CLEAR BEFORE I GET TO THESE POSTERS, I</p> <p>5 HAVE THESE THREE BINDERS HERE OF JOHNSON & JOHNSON</p> <p>6 INTERNAL DOCUMENTATION. HAVE YOU BEEN PROVIDED WITH ALL</p> <p>7 OF THIS?</p> <p>8 A I HAVE.</p> <p>9 Q YOU WERE PROVIDED WITH IT WHEN?</p> <p>10 A OH, LAST YEAR.</p> <p>11 Q AND HAVE YOU REVIEWED IT ALL?</p> <p>12 A A COUPLE TIMES.</p> <p>13 Q ARE YOUR RESULTS CONSISTENT WITH WHAT JOHNSON</p> <p>14 & JOHNSON WAS SEEING INTERNALLY WITH REGARD TO THEIR OWN</p> <p>15 TALC ORE AND THEIR FINAL TALC PRODUCTS?</p> <p>16 A YES. BESIDES THE CHRYSOTILE, WHAT THEY HAVE</p> <p>17 BEEN -- WHAT THEY HAVE BEEN FINDING FOR YEARS AND WHAT</p> <p>18 THEY HAVE BEEN DOCUMENTING FOR YEARS, MY WORK IS REALLY</p> <p>19 QUITE SIMPLE. I'M DOING NOTHING MORE THAN TELLING FOLKS</p> <p>20 WHAT IN MY OPINION JOHNSON & JOHNSON ALREADY KNEW.</p> <p>21 MR. BAILEY: OBJECTION. HIS COMMENTS, MOVE TO</p> <p>22 STRIKE.</p> <p>23 THE COURT: SUSTAINED. I'M GOING TO STRIKE</p> <p>24 THAT LAST QUESTION REGARDING WHAT JOHNSON & JOHNSON</p> <p>25 KNEW. THAT PART IS STRICKEN.</p> <p>26 BY MR. PANATIER:</p> <p>27 Q LET ME JUST ASK YOU, IS WHAT YOU IDENTIFIED</p> <p>28 WHAT JOHNSON & JOHNSON WAS RECORDING INTERNALLY FOR 40</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

24 (Pages 1775 to 1778)

Page 1775	Page 1777
<p>1 YEARS?</p> <p>2 A YES, SIR.</p> <p>3 Q LET'S JUST LOOK AT THOSE PICTURES SO YOU CAN</p> <p>4 SHOW THE JURY A LITTLE BIT OF WHAT YOU FOUND, AND WE'RE</p> <p>5 NOT GOING TO SIT HERE AND TALK FOREVER ABOUT EACH ONE OF</p> <p>6 THESE. BUT JUST SET US STRAIGHT AS FAR AS WHAT WE'RE</p> <p>7 LOOKING AT.</p> <p>8 A WHAT WE'RE LOOKING AT IS A FIBER THAT MAY OR</p> <p>9 MAY NOT HAVE A COUPLE OF DIFFERENT INDIVIDUAL SMALL</p> <p>10 FIBERS STACKED ON TOP OF THEM.</p> <p>11 DO YOU HAVE A POINTER?</p> <p>12 Q YEAH, I DO, ACTUALLY. THAT ONE RIGHT HERE.</p> <p>13 A SO THIS IS A TRANSMISSION ELECTRON -- OOPS.</p> <p>14 THAT'S NOT --</p> <p>15 Q THERE YOU GO. IT'S THE TOP BUTTON.</p> <p>16 A SO YOU CAN SEE SOME STRUCTURE HERE. SO THIS</p> <p>17 FIBER IS 6 MICRONS LONG AND .3 MICRONS WIDE. HERE WE</p> <p>18 HAVE A TALC PARTICLE THAT'S EITHER LAYING ON TOP OF THE</p> <p>19 OTHER AND THIS IS A TREMOLITE FIBER. SO THIS IS ON TOP</p> <p>20 OF A TEM GRID AND THIS IS A PHOTOGRAPH WE TOOK IN OUR</p> <p>21 MICROSCOPE.</p> <p>22 Q SO HOW BIG IS THAT CAMERA THAT TAKES THESE</p> <p>23 PICTURES THAT BIG? IS IT SUPER TINY? THAT'S A DUMB</p> <p>24 QUESTION. IT'S NOT VERY FUNNY.</p> <p>25 SO LET ME ASK YOU THIS: THIS IS ONE OF THOSE</p> <p>26 EXAMPLES WHERE YOU SAID THERE MIGHT BE MORE THAN ONE</p> <p>27 FIBER PRESENT; IS THAT RIGHT?</p> <p>28 A YES. YOU CAN SEE IT HERE. YOU SEE WHAT</p>	<p>1 KNOCKS THEM OUT. AND THAT'S HOW WE DO THIS</p> <p>2 MICROCHEMISTRY. SO THAT IS FROM THAT ONE FIBER.</p> <p>3 SO WE LOOK AT THESE RATIOS. THE MAGNESIUM,</p> <p>4 THE SILICON, THE CALCIUM, AND YOU'LL GET A LITTLE BIT OF</p> <p>5 IRON OCCASIONALLY. THAT IS THE MATCH FOR TREMOLITE.</p> <p>6 Q NOW, WHAT ABOUT THAT LAST PEAK OVER THERE, THE</p> <p>7 ONE ON THE FAR RIGHT?</p> <p>8 A OH, THE COPPER?</p> <p>9 Q COPPER. WHERE DOES THAT COME FROM?</p> <p>10 A WELL, THERE'S NO SUCH THING AS COPPER</p> <p>11 TREMOLITE. IT SITS ON A COPPER GRID. AND THOSE</p> <p>12 ELECTRONS AND X-RAYS, BECAUSE THE COPPER GRID IS SO</p> <p>13 MASSIVE COMPARED TO THIS, IT KNOCKS X-RAYS OFF THAT. SO</p> <p>14 YOU ALWAYS SEE THAT.</p> <p>15 Q SO THE ACTUAL GRID, THAT LITTLE 10 BY 10 IS</p> <p>16 MADE OF COPPER?</p> <p>17 A WELL, IT'S 3 MILLIMETERS IN DIAMETER, AND IT</p> <p>18 WILL HAVE A HUNDRED LITTLE OPENINGS ON IT. IT'S MADE</p> <p>19 OUT OF COPPER. THEY ETCH IT.</p> <p>20 Q OKAY. ALL RIGHT. LET'S GO TO THE NEXT ONE.</p> <p>21 SINCE YOU'VE GOT CONTROL, WHAT ARE WE LOOKING AT HERE?</p> <p>22 A THIS IS THE ELECTRON DIFFRACTION PATTERN. SO</p> <p>23 IF WE GO BACK, YOU CAN SEE SOME OF THESE KIND OF -- SEE</p> <p>24 HERE YOU SEE, LIKE, THESE LITTLE DARK BANDS.</p> <p>25 Q YES.</p> <p>26 A THAT'S CAUSED BY DEFECTS IN THE CRYSTALS. THE</p> <p>27 CRYSTALS DON'T QUITE LINE UP SO IT CAUSES THE ELECTRONS</p> <p>28 GOING THROUGH TO BE SCATTERED A LITTLE BIT MORE.</p>
Page 1776	Page 1778
<p>1 DEFINITELY LOOKED LIKE ADDITIONAL STRUCTURES, BUT WE</p> <p>2 WOULD CALL THAT ONE FIBER.</p> <p>3 Q OKAY. ALL RIGHT. GO AHEAD AND CLICK TO THE</p> <p>4 NEXT ONE. THAT SHOULD BE THE RIGHT BUTTON.</p> <p>5 OKAY. NOW, THIS SAYS "EDS EDXA FOR ELEMENTAL</p> <p>6 CHEMISTRY." WE'VE SEEN THESE BEFORE WHEN DR. COMPTON</p> <p>7 WAS HERE. CAN YOU TELL US WHAT WE'RE LOOKING AT HERE?</p> <p>8 A WE'RE LOOKING AT THE MICROCHEMISTRY FOR THAT</p> <p>9 ONE FIBER. SO I'M SURE DR. COMPTON EXPLAINED HOW WE DO</p> <p>10 THAT. SO WE TAKE THE ELECTRON BEAM AND WE FOCUS IT ON</p> <p>11 THAT FIBER. THAT ELECTRON BEAM CAUSES ELECTRONS IN THE</p> <p>12 ELEMENTS THERE -- WE'VE GOT MAGNESIUM, SILICON, CALCIUM,</p> <p>13 IRON -- TO BE EJECTED. SO IT'S POWERFUL ENOUGH TO KNOCK</p> <p>14 AN ELECTRON OUT.</p> <p>15 WHEN THAT HAPPENS, THE ELEMENTS DON'T LIKE</p> <p>16 THAT. SO ANOTHER ELECTRON WILL JUMP UP AND FILL THAT</p> <p>17 SPACE AND THAT GIVES OFF A PULSE OF X-RAY. AND EVERY</p> <p>18 PULSE OF X-RAY HAS A DIFFERENT ENERGY FOR THE ELEMENT.</p> <p>19 AND SO WHEN THOSE PULSES JUMP OFF WHERE YOU'VE GOT</p> <p>20 SILICON PULSES, X-RAY, MAGNESIUM, CALCIUM, AND THEN THE</p> <p>21 COMPUTER HAS, LIKE, HAS ENOUGH BALLS.</p> <p>22 OKAY. HERE COMES A SILICON ONE. HERE COMES A</p> <p>23 CALCIUM ONE. AND IT JUST STARTS BUILDING THESE</p> <p>24 ELEMENTAL TRACES, ALL DUE TO THE ELECTRON-GENERATING</p> <p>25 X-RAYS, BECAUSE IT'S KNOCKING OTHER ELECTRONS OUT OF THE</p> <p>26 ORBITAL SHELLS.</p> <p>27 REMEMBER WAY BACK WHEN, YOU'VE GOT -- YOU'VE</p> <p>28 GOT THE [INAUDIBLE], THE ELECTRONS SPINNING AROUND.</p>	<p>1 SO IT GIVES YOU KIND OF AN IDEA THAT YOU HAVE</p> <p>2 A CRYSTALLINE FIBER WHEN YOU SEE THAT KIND OF STUFF.</p> <p>3 AND THEN THE ELECTRON BEAM GOING THROUGH IT,</p> <p>4 THE CRYSTAL ACTUALLY CAUSES THE ELECTRON BEAM X-RAYS TO</p> <p>5 BE SCATTERED ALONG THE CRYSTALLINE PLANE. SO YOU CAN</p> <p>6 THEN INDEX THIS AND YOU COULD SAY, YES, THAT MATCHES</p> <p>7 WHAT WE WOULD EXPECT FOR TREMOLITE.</p> <p>8 Q ALL RIGHT. SO FOR EVERY FIBER YOU IDENTIFY,</p> <p>9 FOR ALL OF THE SAMPLES THAT YOU LOOKED AT, DID YOU MAKE</p> <p>10 SURE TO ENSURE THROUGH THE CHEMISTRY IN THE CRYSTAL THAT</p> <p>11 THEY WERE WHAT YOU THOUGHT THEY WERE?</p> <p>12 A YES.</p> <p>13 Q OKAY. SO HERE WE'RE LOOKING AT -- WHAT IS</p> <p>14 THAT?</p> <p>15 A THAT'S ANOTHER BUNDLE THAT'S 3 MICROMETERS IN</p> <p>16 LENGTH. IT'S .4 MICROMETERS WIDE. IT PROBABLY IS A</p> <p>17 BUNDLE. YOU CAN LOOK AT THE END. YOU CAN SEE THAT IT'S</p> <p>18 NOT JUST SQUARED OFF AT THE TOP. SO YOU COULD HAVE</p> <p>19 MULTIPLE FIBERS HERE. AND SO, AGAIN, WE SEE SOME TALC.</p> <p>20 THIS KIND OF SCHMUTZ THAT YOU SEE HERE --</p> <p>21 Q THIS STUFF?</p> <p>22 A NO. THIS STUFF OVER HERE.</p> <p>23 Q THAT STUFF.</p> <p>24 A THAT'S ALL FROM THE REPLICA OF THE FILTER. SO</p> <p>25 HOW WE GET THIS FROM THE FILTER INTO THE TEM, YOU HAVE</p> <p>26 TO PUT A CARBON LAYER DOWN BY ARCING IT. THAT IS ONLY A</p> <p>27 HUNDRED ATOMS THICK.</p> <p>28 Q OKAY.</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

25 (Pages 1779 to 1782)

Page 1779	Page 1781
<p>1 A AND THEN YOU DISSOLVE THE FILTER OUT BEHIND 2 IT. YOU LAY THIS ON THE GRID AFTER YOU PUT THAT CARBON 3 ON THERE. SO YOU HAVE THE GRID. IT'S GOT HOLES IN IT. 4 YOU'VE GOT THE FILTER WITH THE CARBON ON IT, AND YOU 5 STICK THAT ON A SOLVENT. WE CALL IT A VACUOUS WASHER. 6 SOLVENT COMES UP THROUGH THE FILTER PAPER AND 7 SLOWLY DISSOLVES OUT THE FILTER, LEAVES THAT CARBON FILM 8 INTACT. THINK OF TAKING SARAN WRAP AND GOING WITH A 9 PENCIL AND LIFTING IT UP. I DIDN'T DEVELOP THAT. 10 THAT'S IN THE STATE OF PROTOCOL. SOME REALLY SMART 11 PEOPLE DID THAT BACK IN THE '50S. 12 Q OH, BY THE WAY, '50S -- HOW LONG HAVE 13 TRANSMISSION ELECTRON MICROSCOPES BEEN AROUND? 14 A THE FIRST ONE WAS SOLD IN 1943, AND I HAPPEN 15 TO HAVE A 1950 VINTAGE ONE RESTORED IN MY CONFERENCE 16 ROOM. 17 Q OKAY. WELL, SINCE YOU BROUGHT IT UP, I THINK 18 I HAVE A PICTURE OF IT. LET'S SEE IF I CAN FIND THAT 19 PICTURE BECAUSE IT IS PRETTY COOL. OKAY. OKAY. I'LL 20 FIND IT AFTER LUNCH. 21 SO HERE'S ANOTHER ONE. 22 A I THINK THAT'S THE SAME. 23 Q OKAY. SORRY. 24 A THERE'S ANOTHER ONE. THAT'S ANOTHER SMALLER 25 ONE. 3. IT MAY HAVE MULTIPLE FIBERS. YOU CAN SEE AT 26 THE END, BUT YOU CAN SEE THAT THE SIDES ARE PARALLEL. 27 UP HERE I THINK IS ANOTHER ONE PROBABLY, OR IT'S TALC 28 FIBER. AND THEN THIS IS A THICK PIECE OF TALC.</p>	<p>1 THAT'S A CERTAIN AMOUNT OF AREA? 2 A CORRECT. THE 3-MILLIMETER GRID HAS A HUNDRED 3 OPENINGS IN IT. IT LOOKS LIKE A MINIATURE SCREEN ON A 4 WINDOW, AND EACH OF THOSE WINDOWS IS A GRID OPENING. SO 5 THE MICROSCOPIST AT A MAGNIFICATION OF 25,000 TIMES HAS 6 TO GO LOOK RANDOMLY IN THOSE OPENINGS AND CHARACTERIZE 7 EVERYTHING. 8 WELL, I'VE GOT TO DILUTE MY SAMPLE WAY OUT. 9 INSTEAD OF A HUNDRED, HE MAY HAVE TO ANALYZE 500 GRID 10 OPENINGS OR A THOUSAND GRID OPENINGS TO GET THE SAME 11 SENSITIVITY, MEANING SENSITIVITY WE HAVE IS ABOUT 8,000 12 FIBERS PER GRAM. 13 IF YOU DON'T DO THIS HEAVY LIQUID DENSITY 14 METHOD AND YOU WERE TO LOOK AT THE SAME AMOUNT OF 15 OPENINGS, THEN YOUR SENSITIVITY DECREASES TO IN THE 16 MILLIONS OF FIBERS PER GRAM, MEANING I HAVE TO HAVE 17 MILLIONS OF FIBERS IN THE TALC IF I DON'T DO THIS OR 18 LOOK AT A TON OF OPENINGS IN ORDER TO FIND ONE FIBER. 19 Q WHEN YOU TALK ABOUT COUNTING GRID OPENINGS, 20 YOU JUST TALKED ABOUT SENSITIVITY. I WANT TO MAKE SURE 21 OUR VOCABULARY IS STRAIGHT. WHICH ONE IS BETTER FOR 22 IDENTIFYING ASBESTOS, HIGHER SENSITIVITY OR LOWER 23 SENSITIVITY? 24 A WELL, HIGHER SENSITIVITY MEANS THE OPPOSITE, 25 MEANING IF I HAVE ONE -- IF I HAVE AN ANALYTICAL 26 SENSITIVITY OF 8,000 FIBERS PER GRAM OF FINDING 1 FIBER, 27 THAT'S MY ANALYTICAL SENSITIVITY. IF MY SENSITIVITY 28 GETS WORSE AND WORSE, THEN DOING THE EXACT SAME</p>
Page 1780	Page 1782
<p>1 Q THIS RIGHT HERE? 2 A NOW, YOU CAN SEE WHAT HAPPENS IF YOU GET 3 MULTIPLE PIECES OF TALC ON TOP OF EACH OTHER. YOU CAN'T 4 SEE ANYTHING. IN ORDER -- IF YOU DON'T USE THE HEAVY 5 DENSITY LIQUID, THESE SAMPLES WOULD HAVE TO HAVE BEEN 6 DILUTED VERY HIGH. 7 SO INSTEAD OF US NOW BEING ABLE TO LOOK AT A 8 HUNDRED GRID OPENINGS, YOU WOULD HAVE TO ANALYZE 9 HUNDREDS AND HUNDREDS AND HUNDREDS OF GRID OPENINGS TO 10 GET THE SAME SENSITIVITY WE HAVE. 11 Q BECAUSE YOU WOULDN'T BE USING A METHOD WHERE 12 YOU PULL THE TALC OUT. YOU'D HAVE TO DILUTE IT? 13 A RIGHT. 14 MR. BAILEY: OBJECTION, YOUR HONOR. LEADING. 15 THE COURT: SUSTAINED. 16 BY MR. PANATIER: 17 Q WOULD YOU HAVE TO DILUTE IT WITH THE OTHER 18 METHOD? 19 A YEAH. THINK OF A BOWL OF SPAGHETTI. YOU WANT 20 TO COUNT THE SPAGHETTI IN THERE. YOU CAN'T COUNT IT IN 21 THE BOWL. YOU HAVE TO SPREAD IT OUT SO THAT YOU CAN 22 COUNT EACH ONE. I DON'T DO THE HEAVY DENSITY LIQUID 23 SEPARATION METHOD. I HAVE THIS PROBLEM. SO I HAVE TO 24 DILUTE IT OUT, WHICH THEN CAUSES ME -- I HAVE TO LOOK AT 25 MORE AND MORE AND MORE AREA TO FILTER TO GET ANY TYPE OF 26 SENSITIVITY. 27 Q AND WHEN YOU TALK ABOUT COUNTING GRID 28 OPENINGS, IS THAT JUST A WAY OF SAYING COUNTING --</p>	<p>1 ANALYSIS, BUT I DON'T DO THE HEAVY LIQUID DENSITY 2 SEPARATION, 100 OPENINGS, MY SENSITIVITY DROPS FROM 3 8,000 FIBERS PER GRAM TO, SAY, FOR A HUNDRED OPENINGS, 4 SAY A MILLION FIBERS PER GRAM. THAT MEANS THERE HAS TO 5 BE AT LEAST A MILLION FIBERS PER GRAM IN THE TALC BEFORE 6 I HAVE THE STATISTICS OF FINDING ONE FIBER. 7 Q SO THE LOWER THE SENSITIVITY, THE BETTER? 8 A CORRECT. 9 Q OKAY. ALL RIGHT. 10 A WELL, THE HIGHER THE SENSITIVITY THE BETTER. 11 IT'S OPPOSITE. YOU COULD USE IT EITHER WAY. 12 Q AND SO HERE, THIS ONE, WHAT'S THAT THING -- 13 THAT BIG BLACK THING OVER ON THE LEFT THERE, THE BIG 14 DARK PIECE THERE? 15 A THAT'S THE TEM GRID. WE'RE AT A MAGNIFICATION 16 HERE OF PROBABLY 15,000 TIMES. SO THE PROBLEM YOU HAVE 17 IS YOU HAVE THESE -- THAT'S A BIG BUNDLE. THAT'S 16 18 MICROMETERS IN LENGTH AND IT'S 2 MICROMETERS WIDE, AND 19 YOU CAN SEE MULTIPLE FIBERS AT THE END. 20 BUT THE GRID HAS THE METAL PART AROUND THE 21 HOLES, LIKE A SCREEN. SO THE ASBESTOS FIBER BUNDLE HERE 22 IS LYING ON TOP OF THE GRID. WE CAN'T SEE THE WHOLE 23 THING. 24 Q OKAY. I'M JUST GOING TO PAGE THROUGH A FEW OF 25 THESE SO WE CAN LOOK AT THESE. IS THAT A FIBER OR A 26 BUNDLE? 27 A I THINK EVERYBODY CAN SEE THAT'S A BUNDLE. 28 YOU CAN SEE MULTIPLE FIBERS STICKING OUT AND AT BOTH</p>

Trial Day 14 AM Session on May 15, 2018
Anderson, et al. vs. Borg Warner Corporation, et al.

26 (Pages 1783 to 1786)

Page 1783	Page 1785
<p>1 ENDS. SO THAT'S A BUNDLE.</p> <p>2 Q OKAY. HERE'S ONE. NOW, HERE THIS ONE, IT'S</p> <p>3 GOT A RED CIRCLE ON THE BOTTOM. IT SAYS "TALC." NOW,</p> <p>4 TO BE VERY CLEAR, DID YOU COUNT TALC PARTICLES AS</p> <p>5 ASBESTOS?</p> <p>6 A NO.</p> <p>7 Q ALL RIGHT. SO WHY DID YOU TAKE A PICTURE OF A</p> <p>8 TALC PARTICLE?</p> <p>9 A WELL, THIS IS A FIBROUS TALC. FIBROUS TALC IS</p> <p>10 FOUND IN SOME OF THESE -- IN SAMPLES. AND AGAIN,</p> <p>11 THEORETICALLY USING THE HEAVY DENSITY, WE SHOULDN'T SEE</p> <p>12 FIBROUS TALC. WE SHOULDN'T SEE ANY OF THESE TALC</p> <p>13 PARTICLES, BUT SOME GETS DOWN.</p> <p>14 BUT WE RECOGNIZE IF WE SEE FIBROUS TALC, TO</p> <p>15 RECORD IT. WE DON'T COUNT IT BECAUSE FIBROUS TALC</p> <p>16 DOESN'T JUST FORM BY ITSELF LIKE TALC. IT'S A CHANGE</p> <p>17 FROM AN ASBESTOS FIBER ANTHOPHYLLITE. IT'S CALLED</p> <p>18 METAMORPHISM. THIS HAPPENS -- I'M NOT A GEOLOGIST.</p> <p>19 MR. BAILEY: EXCUSE ME, YOUR HONOR. IT'S</p> <p>20 BECAUSE OF THAT I OBJECT TO HIM OFFERING ANY TESTIMONY</p> <p>21 ON EVOLUTION OF MINERALS OR FIBERS OR ANYTHING OF THAT</p> <p>22 NATURE. LACK OF FOUNDATION.</p> <p>23 THE COURT: I WILL SUSTAIN.</p> <p>24 BY MR. PANATIER:</p> <p>25 Q AGAIN, YOU'RE NOT A GEOLOGIST; RIGHT?</p> <p>26 MR. BAILEY: AND I WOULD MOVE TO STRIKE THE</p> <p>27 TESTIMONY.</p> <p>28 THE WITNESS: NO.</p>	<p>1 WAIT. SO QUARTER TO 2:00.</p> <p>2</p> <p>3 (THE JURORS EXITED THE COURTROOM.)</p> <p>4 (THE FOLLOWING PROCEEDINGS WERE HELD</p> <p>5 OUTSIDE THE PRESENCE OF THE JURY:)</p> <p>6</p> <p>7 THE COURT: OKAY. SO WE'RE OUTSIDE THE</p> <p>8 PRESENCE OF THE JURORS AND ALTERNATE JURORS.</p> <p>9 I THINK YOU CAN PROBABLY GET IT IN. YOU JUST</p> <p>10 NEED TO ASK A FEW MORE QUESTIONS.</p> <p>11 MR. PANATIER: I WILL, YOUR HONOR.</p> <p>12</p> <p>13 (THE AFTERNOON RECESS WAS TAKEN AT</p> <p>14 11:41 A.M.)</p> <p>15 * * *</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p>26</p> <p>27</p> <p>28</p>
Page 1784	
<p>1 THE COURT: THE COURT WILL STRIKE THE</p> <p>2 TESTIMONY.</p> <p>3 BY MR. PANATIER:</p> <p>4 Q YOU'RE NOT A GEOLOGIST; RIGHT?</p> <p>5 A I AM NOT.</p> <p>6 Q THROUGH YOUR 35 YEARS OF DOING THIS, DO YOU</p> <p>7 HAVE AN APPRECIATION FOR HOW TALC FORMS IN THE EARTH?</p> <p>8 A YES. IT'S IMPORTANT FOR OUR ANALYSIS IN TALC</p> <p>9 AND ANTHOPHYLLITE. THAT'S WHY I KNOW ABOUT THIS.</p> <p>10 Q OKAY. AND DID YOU HAVE TO KNOW ABOUT THAT IN</p> <p>11 ORDER TO CONDUCT THIS ANALYSIS, SIR?</p> <p>12 A YES.</p> <p>13 Q OKAY. ALL RIGHT, SIR. SO CAN YOU JUST TELL</p> <p>14 US WHY YOU RECORDED FIBROUS TALC?</p> <p>15 A BECAUSE FIBROUS TALC FORMS FROM ASBESTOS, FROM</p> <p>16 ANTHOPHYLLITE.</p> <p>17 MR. BAILEY: SAME OBJECTION, YOUR HONOR.</p> <p>18 HAVING AN APPRECIATION FOR IT DOESN'T MAKE IT --</p> <p>19 THE COURT: I'M GOING TO SUSTAIN. I THINK</p> <p>20 THERE NEEDS TO BE FURTHER FOUNDATION. WHY DON'T WE DO</p> <p>21 THIS. WHY DON'T WE GO AHEAD AND TAKE OUR NOON RECESS AT</p> <p>22 THIS POINT.</p> <p>23 REMEMBER THE ADMONITION NOT TO FORM OR EXPRESS</p> <p>24 AN OPINION OR DISCUSS THIS MATTER WITH ANYONE UNTIL THE</p> <p>25 CASE IS SUBMITTED TO YOU FOR DELIBERATION.</p> <p>26 YOU'RE GOING TO RETURN AT A QUARTER UNTIL</p> <p>27 2:00. I HAVE AN OFFSITE MEETING THAT I HAVE TO ATTEND,</p> <p>28 SO JUST TO MAKE SURE I'M BACK. I DON'T WANT YOU TO</p>	<p>1 SUPERIOR COURT OF THE STATE OF CALIFORNIA</p> <p>2 FOR THE COUNTY OF LOS ANGELES</p> <p>3 DEPARTMENT 2 HON. GLORIA WHITE-BROWN, JUDGE</p> <p>4</p> <p>5 COORDINATED PROCEEDING) JCCP NO. 4674</p> <p>6 SPECIAL TITLE (RULE 3.550))</p> <p>7)</p> <p>8 LAOSD ASBESTOS CASES)</p> <p>9)</p> <p>10)</p> <p>11)</p> <p>12)</p> <p>13)</p> <p>14)</p> <p>15)</p> <p>16)</p> <p>17)</p> <p>18)</p> <p>19)</p> <p>20)</p> <p>21)</p> <p>22)</p> <p>23)</p> <p>24)</p> <p>25)</p> <p>26)</p> <p>27)</p> <p>28)</p> <p>1 I, DEBORAH MORIN, CSR NO. 11558, OFFICIAL REPORTER</p> <p>2 PRO TEMPORE OF THE SUPERIOR COURT OF THE STATE OF CALIFORNIA,</p> <p>3 FOR THE COUNTY OF LOS ANGELES, DO HEREBY CERTIFY THAT THE</p> <p>4 FOREGOING PAGES, 1689 TO 1785, COMPRISE A FULL, TRUE AND</p> <p>5 CORRECT TRANSCRIPT OF THE PROCEEDINGS AND TESTIMONY TAKEN IN</p> <p>6 THE ABOVE-ENTITLED CAUSE ON MAY 15, 2018.</p> <p>7 DATED THIS 15TH DAY OF MAY, 2018.</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p>26</p> <p>27</p> <p>28</p>

Exhibit 13

Page 1

STATE OF SOUTH CAROLINA) IN THE COURT OF COMMON PLEAS
COUNTY OF DARLINGTON) CASE NO.: 2017-CP-16-0400

ANTOINE BOSTIC, Individually and as)
Personal Representative of the Estate of)
BERTILA DELORA BOYD-BOSTIC,)
Plaintiff,)
vs.)
3M COMPANY, et al.,)
Defendants.)

The hearing before the Honorable Jean H. Toal, Judge for Richland County, was taken at Richland County Courthouse, 1701 Main Street, Courtroom 3B, Columbia, South Carolina on Friday, the 11th day of May, 2018, scheduled for 10:00 a.m. and commencing at the hour of 10:07 a.m. before Barbara S. Ham, Court Reporter and Notary Public in and for the State of South Carolina; pursuant to Rule 30 of the South Carolina Rules of Civil Procedure.

1 APPEARANCES:

2

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21

Will Early, Esquire

22

Susan Collings

23

Allyson Twilley, Esquire

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CONTENTS	
(Pretrial Hearing)	
	PAGE
EXHIBIT INDEX	6
STIPULATIONS	7
CERTIFICATE OF REPORTER	221

Page 6

1

2

* * * * *

3

EXHIBIT INDEX

4

Exhibits:

Marked at Page

5

[None entered.]

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23

Court Reporter's note:

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-- indicates interruption; incomplete phrases; unfinished

25

sentences

1 kinds of things. Is that -- is that reasonable?

2 MR. COOK: Yes, ma'am.

3 THE COURT: All right. It's now twenty minutes of 12. Why
4 don't we take a break until five minutes to 12. Very
5 good.

6 (Off the Record)

7 THE COURT: Give me a moment to rearrange things here. All
8 right. Ladies and gentleman, all right. My proposal
9 would be to take up next Defendants' Motion to Preclude
10 the Testimony of Dr. Longo.

11 MR. COOK: Yes, ma'am. Thank you.

12 THE COURT: All right, sir.

13 MR. COOK: Eric Cook on behalf of Johnson & Johnson and
14 Johnson & Johnson Consumer, Inc., Your Honor.

15 THE COURT: Mr. Cook. Okay.

16 MR. COOK: We have offers that Dr. Longo to support the
17 contention that Defendants' products were contaminated
18 with asbestos. But his made for litigation opinions are
19 built on unreliable evidentiary foundation and cannot
20 survive scrutiny. His opinions should be excluded for
21 three primary reasons, Your Honor. First, he cannot
22 confirm that the products he tested were in their
23 original condition, making it impossible to say with any
24 confidence that they were in the same condition today
25 that they were at the time of sale. Second, his opinions

1 THE COURT: Well, here's -- here's where I see we are in this
2 issue about Dr. Longo. Of course we start with Rule of
3 Evidence 702. All right. Which says you can have an
4 expert if -- all right. They've got specialized
5 knowledge, will assist the prior fact, the witness is
6 qualified by knowledge, skill, experience, training and
7 education. And I have no trouble with finding that Dr.
8 Longo meets those tests. But then we've got to -- the
9 judge is supposed to take a look at the content of the
10 expert testimony, all right. And exercise a gatekeeping
11 responsibility. And we do that, by first of all,
12 deciding whether it's beyond ordinary knowledge and I
13 have no trouble with finding that this kind of material
14 from all these experts is beyond ordinary knowledge. An
15 expert doesn't have to be a specialist but the expert has
16 to acquire the requisite knowledge, schooling,
17 experience. I have no trouble finding that with Dr.
18 Longo. But then you've got to determine whether his
19 information is reliable. And it is the reliability prong
20 that's being attacked by the defense, saying that it's
21 not reliable because it is based on testing of material
22 for which a chain of custody cannot be established. And
23 what I understand you to be saying is this is not an
24 attempt to show the particularity of the physical
25 component in an individual's body, but is intended to

1 show by indirect evidence or by circumstantial evidence
2 the historical -- in part historical material identified
3 as the Defendants' product and what his test done,
4 whenever they were done, indicates. And what he's chosen
5 to do is attack the chain of custody as the foundation of
6 unreliability. What you're saying is it can be evaluated
7 for what it is, but what it is is simply an attempt to
8 take historical material, museum material, and what not
9 and discuss what is found in that historical material
10 from a chemistry and dimensional aspects.

11 MR. FINCH: Material science testing.

12 THE COURT: Material science type thing. Now, all right, I
13 suppose where they are is -- I -- I don't even know if
14 they are really attacking his ability as a material
15 scientist. Or are they just re-asking what he calls
16 asbestos material -- what they call asbestos. He is
17 looking at the old historical material and saying what
18 can you make of this old historical material given the
19 fact that so many other influences could have been
20 brought to bear on what the content is. I don't think
21 he's so much questioning what Dr. Longo says the content
22 is, he is questioning with his labels, but I don't think
23 he's fussing so much in what he says the chemistry and
24 the dimensions are. He just says that's not the whole
25 story of what constitutes asbestos.

1 MR. FINCH: That's what the EPA Ridge Nine and the --

2 THE COURT: Right. Is it all this battle about.

3 MR. FINCH: Asbestiform versus non-asbestiform.

4 THE COURT: I think what he's saying is because the material
5 has been through so many hands before it gets to Dr.

6 Longo, if Dr. Longo is trying to say Johnson & Johnson's
7 current baby powder has asbestos, this is not a fair way
8 of doing it because of the chain of custody problems.

9 MR. FINCH: Okay. Yes, that's --

10 THE COURT: I may -- I may be mis-characterizing --

11 MR. FINCH: No, I think you've got it right -- and may I
12 point, Your Honor, to another rule of evidence that I
13 think answers your concerns.

14 THE COURT: All right.

15 MR. FINCH: Look at rule of evidence 703. Which is very
16 similar to the federal rule although it -- not entirely.
17 If of a type reasonably relied upon by experts in a
18 particular field in forming opinions or inferences upon
19 the subject, the facts or data need not be admissible in
20 evidence. This is saying the facts or data in a
21 particular case upon which an expert bases an opinion or
22 inference may be those perceived by or made known to the
23 expert at or before the hearing. If it's of a type, if
24 it's a type of evidence, a type of thing that an expert
25 in the field reasonably relies upon in forming his or her

1 MR. COOK: Plaintiff is arguing, at least as I understand
2 it, maybe I'm wrong, but they are arguing that the
3 particle size distribution establishes essentially the
4 chain of custody or reliability.

5 THE COURT: It establishes that you haven't got something
6 that's different from what's in the acknowledged Johnson
7 & Johnson product.

8 MR. COOK: What it doesn't establish though is that is in
9 fact Johnson & Johnson because it could be the another
10 brand that matches. That's -- that's the point I'm
11 raising, Your Honor.

12 THE COURT: Okay.

13 MR. COOK: If there's a different cosmetic talc product that
14 matches that, it doesn't establish that somebody didn't
15 refill the bottle at some point. That's all. Thank you,
16 Your Honor.

17 THE COURT: Okay. All right. I am not going to exclude Dr.
18 Longo from testifying, so I deny the motion to exclude
19 Dr. Longo from testifying. But I am going to think a
20 little bit about whether or not to limit Dr. Longo's
21 testimony in any way with respect to his commentary on
22 products that are not products from the Windsor mines.
23 All right. And to me, all of these problems with the
24 chain of custody and reliability are solved. If he is
25 testifying about products from the Windsor mines where

1 the high likelihood is, from the evidence that's been
2 offered, that -- and I believe it's something that both
3 defense experts and Plaintiff's experts agree upon, that
4 the products Ms. Boyd used, the Johnson & Johnson
5 products that Ms. Boyd, used in a preliminary stage where
6 there's enough evidence to survive summary judgment that
7 she used Johnson & Johnson products that the high
8 likelihood, or the overwhelming likelihood is that the
9 products she used came from the Windsor mine in the time
10 period from 1987 through 2003. She used some other
11 products too, but the Johnson & Johnson products she
12 used, and she used a lot of it, the high likelihood is
13 that those products came from the Windsor mines. In
14 terms of Dr Longo's conclusion that those products, the
15 ones from the Windsor mine, had asbestos in them, I am
16 not going to preclude his testimony about that. But to
17 the extent that he talks about the presence or absence of
18 asbestos in products not from the time period are not
19 from the Windsor mines. My current ruling is that he
20 cannot talk about those other products and those products
21 from outside the time period we're talking about and
22 outside the Windsor mine as the source. Now, all right.
23 How to separate out his general conversation or
24 discussion as an expert about how he conducted his
25 analysis and how Blunt and some of the others conducted

1 their analysis, I'm not making any limitation about that.
2 Experts on both sides of this thing have relied on the
3 same stuff he relies upon. But to try to be careful
4 about the witness who is going to be here to say based on
5 all of my background and experience and analysis. My
6 analysis of the products from this particular time and
7 this particular mine indicates that they contained
8 asbestos. I'm going to limit him to making that
9 conclusion on the basis of products from the Windsor mine
10 in the time period regarding '87 to 2003.

11 MR. SWETT: Your Honor, just one point if I may for
12 clarification. Based on your ruling, the -- he tested
13 samples prior to '87 that came from Windsor mine, the
14 same mine. You know --

15 THE COURT: Right.

16 MR. SWETT: Vermont was the source from '68 to 2003 and I
17 think that only encompasses maybe one other sample like
18 from '78. I mean would he be able to talk about that
19 sample as well?

20 THE COURT: That '78 sample is a museum sample, I don't know
21 enough about it as I'm sitting here to -- to say how he got
22 it or where he got it or whether there's some defect in the
23 chain of custody. So, I mean if it came out of the J&J
24 museum, which is what I assume is the case, then I'm not
25 going to exclude it because J&J would have had it for all

1 that period of time. Anything that came from J&J, I don't
2 care what time frame it is.

3 MR. SWETT: Okay.

4 THE COURT: It's going to be okay. All right. Because they
5 had it and then he had it. But anything that -- other
6 than that, that comes from sources that are not J&J
7 sources or it's -- it maintained the museum and warehouse
8 and historical supplies of its products all kinds and
9 many people have tested them, including Longo. I'm not
10 going to exclude those.

11 MR. SWETT: Okay. Thank you, Your Honor.

12 MR. FINCH: Thank you, Your Honor.

13 THE COURT: All right. We're at 1:30. All right. That
14 deals with Longo. Now, we are certainly going to have
15 mercy on our court reporter and let her have a little
16 lunch. All right. But I want to try to figure out kind
17 of where we are. I thought Longo was my most difficult
18 expert witness. I can't frankly see any -- anything like
19 the problems that were identified in the Longo primary
20 chain of custody problems and these other witnesses. I
21 don't care whether it's the defense that's fussing about
22 it or the Plaintiffs that are fussing about it. There is
23 a big a split of opinion between these two sides as to
24 how you identify the presence of asbestos. And that is
25 the -- that's what the quarrel is about all these other

1 CERTIFICATE OF REPORTER

2 I, BARBARA S. HAM, COURT REPORTER AND NOTARY PUBLIC IN
3 AND FOR THE STATE OF SOUTH CAROLINA AT LARGE, HEREBY
4 CERTIFY THAT I REPORTED THE HEARING ON FRIDAY, THE 11TH DAY
5 OF MAY 2018, AND THAT THE FOREGOING 220 PAGES CONSTITUTE A
6 TRUE AND CORRECT TRANSCRIPTION OF SAID HEARING.

7 I FURTHER CERTIFY THAT I AM NEITHER ATTORNEY NOR
8 COUNSEL FOR, NOR RELATED TO OR EMPLOYED BY ANY OF THE
9 PARTIES CONNECTED WITH THIS ACTION, NOR AM I FINANCIALLY
10 INTERESTED IN SAID CAUSE.

11 I FURTHER CERTIFY THAT THE ORIGINAL OF SAID TRANSCRIPT
12 WAS THEREAFTER SEALED AND DELIVERED TO W. CHRISTOPHER SWETT,
13 ESQUIRE, MOTLEY RICE LLC, 28 BRIDGESIDE BLVD., MT. PLEASANT,
14 SOUTH CAROLINA, WHO WILL RETAIN THIS SEALED ORIGINAL
15 TRANSCRIPT AND SHALL BE RESPONSIBLE FOR FILING SAME WITH THE
16 COURT PRIOR TO TRIAL OR ANY HEARING WHICH MIGHT RESULT IN A
17 FINAL ORDER ON ANY ISSUE.

18 IN WITNESS WHEREOF, I HAVE SET MY HAND AND SEAL THIS
19 17TH DAY OF MAY, 2018.
20

21 _____
22 BARBARA S. HAM, COURT REPORTER

23 MY COMMISSION EXPIRES APRIL 13, 2026
24
25

Exhibit 14

**IN THE CIRCUIT COURT OF THE CITY OF ST. LOUIS
STATE OF MISSOURI
The Honorable Rex M. Burlison, Judge**

GAIL LUCILLE INGHAM, ET AL.,)
Plaintiffs,)
vs.) Cause No. 1522-CC10417-01
JOHNSON & JOHNSON, ET AL.,)
Defendants.)

TRIAL TRANSCRIPT
Volume 6A

June 7, 2018

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OFFICIAL COURT REPORTER
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TWENTY-SECOND JUDICIAL CIRCUIT
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INDEX

Page

Proceedings outside the presence of the jury
Re: Defendant's Objections to Plaintiffs' exhibits 964

WILLIAM E. LONGO, Ph.D.

Direct Examination Continued by Mr. Lanier 973Certificate of Court Reporter 1085

EXHIBITS**PLAINTIFFS'****RECEIVED**

6718 (Dr. Longo's report) Demonstrative	978
5862 (Dr. Longo's testing data) (Demonstrative)	989
1202 (Julie Pier report)	1006
7580 (Dr. Alice Blount's paper)	1031
6824 (J&J letter)	1036
51 (Proposed Specifications)	1041
40 (Bill Ashton document)	1043
8215 (Grid opening photograph) Demonstrative	1054
4633 (Dr. Longo math) Demonstrative	1060
8351 (Bottle chart) Demonstrative	1081

VOLUME 6A**June 7, 2018**

(The following proceedings were had in open court, outside the presence and hearing of the jury:)

THE COURT: Mr. Dubin, you had something.

MR. DUBIN: Mr. Lanier, this morning, handed me three documents that he said he intended to address with the witness today. Two which are Imerys documents. I asked him -- my boxes are still coming over from the hotel, I asked him whether these were on the reliance list for the witness, such that he indicated an intention to offer opinions about them.

As your Honor knows, we had an agreement to produce reliance lists and materials for the witnesses. He hasn't given me an answer yes or no, says that he wouldn't because he didn't think it matters. Obviously, not only do we have objections to the Imerys documents --

THE COURT: Let's see the documents. Is this something that's going to be presented with Dr. Longo?

MR. LANIER: Yes, your Honor. These are documents that --

THE COURT: Hang on a second. Dr. Longo, could I ask you to step out?

THE WITNESS: Yes, your Honor. I was wondering if I should be here.

09:03:25 1 (Dr. Longo exited the courtroom.)

09:03:32 2 THE COURT: Yes, Mr. Lanier.

09:03:37 3 MR. LANIER: Yes. I expect these documents
09:03:38 4 will be talked about in cross-examination with their
09:03:42 5 experts. I would like Dr. Longo to explain what these
09:03:45 6 documents mean so that the jury's already got the benefit of
09:03:49 7 that once I get to their experts and cross-examine. This is
09:03:53 8 reasonable anticipation. It saves me from bringing him back
09:03:55 9 in rebuttal.

09:03:57 10 MR. DUBIN: The whole purpose of the exchange
09:04:00 11 of documents before and reliance list was to know what that
09:04:04 12 witness intends to rely on for his opinions. We're not
09:04:08 13 proffering these documents affirmatively. So, therefore,
09:04:11 14 they are part of what he is now purporting to rely on for
09:04:15 15 his opinions.

09:04:16 16 If that was the case, he produced many, many
09:04:19 17 documents along with his deposition, it would have been a
09:04:21 18 simple matter because we could have inquired about them at
09:04:24 19 his deposition to find out what opinions he was being
09:04:26 20 offered. Those are the rules the parties agreed to, and I
09:04:30 21 think they should be abided by.

09:04:32 22 THE COURT: Are these three documents a
09:04:34 23 surprise to the defendant?

09:04:38 24 MR. DUBIN: Certainly, I did not know that
09:04:39 25 Dr. Longo was going to be offering any opinions about them.

09:04:42 1 THE COURT: Have others testified to these
09:04:44 2 documents?

09:04:45 3 MR. DUBIN: None of our witnesses.

09:04:49 4 MR. LANIER: Your Honor, I will represent
09:04:51 5 those have been used in cases against the other side. We've
09:04:54 6 even used them in depositions in this case with the other
09:04:58 7 side present. Those aren't surprise documents, they're not
09:05:01 8 new opinion documents for this witness. The witness has
09:05:04 9 already offered the opinions that these documents go to
09:05:07 10 support. These aren't surprise documents at all.

09:05:10 11 MR. DUBIN: Again, your Honor, the issue is
09:05:12 12 whether this witness has indicated an intention to offer
09:05:15 13 opinions about those documents. As part of his reliance
09:05:18 14 list such that we would inquire about it at the deposition.
09:05:22 15 You know, again, that's the rules that both sides had agreed
09:05:25 16 to in terms of the reliance list.

09:05:27 17 THE COURT: Are these new opinions that would
09:05:28 18 come out of these documents?

09:05:31 19 MR. LANIER: No, your Honor. One of
09:05:32 20 documents is the document I referenced in opening about how
09:05:35 21 they would tilt the table to get a different read, and I
09:05:38 22 would like for this doctor to explain how tilting the table
09:05:41 23 would affect the read under a TEM microscope. He's
09:05:45 24 testified about the TEM microscope, and what's to be done,
09:05:49 25 what's not to be done.

09:05:51 1 The other document talks about the concentration
09:05:54 2 method, which is -- and what it would show, which is what
09:05:57 3 this doctor does. It's what he's testified to. It's the
09:06:00 4 heart of his opinion. It's just another document of Luzenac
09:06:02 5 and the co-conspirator.

09:06:07 6 MR. DUBIN: Your Honor, I have no problem if
09:06:10 7 he wants to ask the doctor about the scientific concept,
09:06:13 8 well, it's inappropriate to tilt a fiber under a TEM. If
09:06:17 9 you tilt a fiber under TEM, will it give you a different
09:06:22 10 diffraction pattern.

09:06:23 11 And all of the scientific concepts I have
09:06:25 12 absolutely no problem with, but to come in now and try to
09:06:28 13 offer opinions, for example, well, isn't this what, you
09:06:29 14 know, Imerys was thinking, isn't this what Imerys was
09:06:32 15 saying, can you offer an opinion about that?

09:06:36 16 That goes beyond even what he should be doing in
09:06:39 17 the abstract. I have no problem with the scientific
09:06:40 18 concepts, if he wants to talk about these scientific
09:06:43 19 concepts with this witness about something that's not on his
09:06:46 20 reliance list and is not something that he wrote or has any
09:06:48 21 personal knowledge about what was in the minds of these
09:06:51 22 individuals, that's inappropriate anyway.

09:06:53 23 MR. LANIER: I'm not --

09:06:54 24 THE COURT: All right. These can be used for
09:06:57 25 scientific concepts. This witness will not be able to

09:07:00 1 testify about opinions that he has not previously given in
09:07:04 2 deposition, but he can talk to these about scientific
09:07:09 3 concepts.

09:07:10 4 MR. DUBIN: Your Honor, I don't know that the
09:07:11 5 documents themselves should be displayed through this
09:07:14 6 witness if they have a basis to get these documents into
09:07:18 7 evidence. Again, I think he should be able to ask him about
09:07:22 8 TEM and tilting and how the process works. But the reason
09:07:26 9 why he wants to use these documents is supposedly to, I
09:07:29 10 would imagine, bolster the expert's opinion to say oh, look
09:07:32 11 what's Julie Pier's saying here, do you have an opinion
09:07:35 12 about that.

09:07:36 13 THE COURT: Has he been asked that opinion
09:07:38 14 about what Julie said before?

09:07:40 15 MR. LANIER: He has.

09:07:41 16 MR. DUBIN: No.

09:07:42 17 MR. LANIER: Yes and no. It depends on what
09:07:44 18 you mean by that.

09:07:45 19 THE COURT: The ruling is clear. These will
09:07:48 20 be used for scientific. Will not be used to expand his
09:07:51 21 opinion that he hasn't already given on the record.

09:07:56 22 MR. LANIER: Thank you, your Honor.

09:07:56 23 MR. DUBIN: Okay. And in that sense, he has
09:07:58 24 not offered any opinion about any of these documents before.
09:08:01 25 So is he going to be allowed then to narrate what he thinks

09:08:05 1 the document means and says? The document that we object to
09:08:10 2 the admission. Because I would have asked if those were on
09:08:14 3 his reliance list, I would have asked him about them.

09:08:17 4 THE COURT: Anything further?

09:08:18 5 MR. DUBIN: No, your Honor.

09:08:19 6 MR. LANIER: Two matters, your Honor, to make
09:08:21 7 sure that, I think these are both fine to get into but I
09:08:24 8 want to make sure that I'm a little more careful than I was
09:08:28 9 yesterday.

09:08:30 10 The first is, having seen the video of the dust,
09:08:35 11 which is where we ended yesterday, I think it's reasonable
09:08:38 12 that maybe one of the jurors might be thinking, well, gee if
09:08:41 13 it's that dusty everybody's going to get cancer. So I'd
09:08:44 14 like to be able to ask the witness just because you're
09:08:47 15 exposed to something like this.

09:08:49 16 MR. DUBIN: I'm sorry, you're whispering, I
09:08:51 17 can't hear you very well. Can you speak up?

09:08:55 18 MR. LANIER: Yeah, I've got a witness out
09:08:56 19 there, and I don't want to -- if you could approach perhaps?

09:09:00 20 I want to be able to ask him just because you're
09:09:02 21 exposed to something does that automatically mean you get
09:09:06 22 cancer. For example, just because you smoke cigarettes,
09:09:07 23 does everybody who smokes get cancer? Does everybody who
09:09:11 24 has HPV get cancer. That type of stuff. And I want to make
09:09:15 25 sure I don't cross -- I'm not bringing in the acts of big

09:09:19 1 tobacco there.

09:09:20 2 MR. DUBIN: You can't ask him that anyway,
09:09:22 3 he's not a medical doctor. We'll have to cross that bridge
09:09:25 4 when you have a medical doctor on the stand. He has no
09:09:28 5 foundation to talk about the disease, so I will object and
09:09:31 6 voir dire on his qualifications if you're going to try to do
09:09:35 7 that with him.

09:09:37 8 THE COURT: Mr. Dubin's correct. I'm not
09:09:39 9 going to allow a medical causation question to be given to a
09:09:43 10 Ph.D.

09:09:43 11 MR. LANIER: Okay. I didn't mean it as a
09:09:45 12 medical causation question. I was thinking in terms of are
09:09:48 13 there lots of things we get exposed to that don't always
09:09:52 14 cause disease. I guess that's causation. I walked right
09:09:56 15 back into it. I got that, your Honor.

09:09:58 16 The other one I wanted to ask him is, I said
09:10:02 17 yesterday on the videos that I was offering the videos for
09:10:06 18 demonstrative purpose of dustiness and not for dust counts.
09:10:08 19 I was -- one of those experiments was an experiment that did
09:10:13 20 produce the dust counts below the waist.

09:10:16 21 So, for example, the stipulation you read that we
09:10:19 22 had agreed to went to the baby video. No question about
09:10:22 23 that. But Mr. Dubin did get the numbers of the below the
09:10:26 24 waist part of the video, he had a chance to cross-examine
09:10:28 25 the witness on it in deposition.

09:10:31 1 I need those numbers for three -- two to three of
09:10:34 2 my plaintiffs, depending upon which ones Texas law apply to.

09:10:40 3 THE COURT: The stipulation only went to the
09:10:42 4 baby?

09:10:42 5 MR. LANIER: Right. So I wanted to make sure
09:10:43 6 I got into the numbers, but I don't want to cross that line
09:10:47 7 because I thought I had said yesterday that I was only using
09:10:50 8 it for demonstrative purposes. And I can ask the questions
09:10:52 9 apart from the video. Did you take measurements of what
09:10:56 10 exposure would be and what the fiber count would be, I can
09:10:59 11 do it that way.

09:11:00 12 MR. DUBIN: On that, your Honor, I think
09:11:02 13 we've objected in general to the use of that because of the
09:11:04 14 fact we don't think that it's relevant or reliable to this
09:11:09 15 group of Plaintiffs.

09:11:10 16 For example, he selected some highest count bottle
09:11:14 17 that he had that wasn't even during the time period of usage
09:11:19 18 for the plaintiffs. I think we made this motion before, but
09:11:21 19 I'm just making sure that I did. Our motions on Dr. Longo
09:11:26 20 were denied. We understand that ruling.

09:11:29 21 I just want to make sure we object to the
09:11:31 22 introduction of any of this evidence, but -- so that I don't
09:11:34 23 have to get back up earlier to the extent it was covered in
09:11:38 24 the --

09:11:39 25 THE COURT: Okay.

09:11:39 1 MR. DUBIN: But I'm not going to make the
09:11:41 2 argument that the stipulation covered that, I agree it did
09:11:43 3 not.

09:11:43 4 THE COURT: That was the point. The
09:11:45 5 stipulation was to the baby. The opinions on -- or the
09:11:50 6 results of counts, I'll have to hear the variables that this
09:11:54 7 witness used to recreate the experiment, and then when we
09:11:59 8 get those variables out of what he addressed, then you go
09:12:03 9 into the opinion, and I'll see where we are at that time.

09:12:07 10 MR. DUBIN: Okay. That's fine, your Honor.

09:12:10 11 MR. MAGEE: Judge, I may have missed it, but
09:12:12 12 I don't think the exhibit numbers for those two documents
09:12:15 13 were put in the record.

09:12:18 14 THE COURT: I think there's three.

09:12:20 15 MR. MAGEE: Three of them.

09:12:22 16 THE COURT: I'm not -- it's -- one's
09:12:25 17 PLT01202. If that's --

09:12:32 18 MR. LANIER: Yes, that's it, your Honor.

09:12:33 19 THE COURT: Okay. And one is PLT00040. And
09:12:45 20 the third is PLT00073. Anything further this morning? How
09:12:54 21 are we doing upstairs?

09:12:56 22 DEPUTY HUBBARD: We're full. We're ready.

09:12:58 23 THE COURT: Full house. Mr. Dubin, these are
09:13:06 24 yours.

09:13:07 25 MR. DUBIN: Thank you.

09:13:21 1 THE COURT: Counsel, we're going to bring the
09:13:22 2 jury down.

09:13:24 3 (The following proceedings were had in open
09:13:24 4 court:)

09:16:41 5 THE COURT: All right. Please be seated.
09:16:45 6 Welcome back, everyone. Everything going okay upstairs for
09:16:51 7 everyone? Ready to get started?

09:16:55 8 All right. Dr. Longo.

09:17:00 9 MR. LANIER: Yes, your Honor. I think we
09:17:04 10 sent him outside, I'll go get him.

09:17:39 11 THE COURT: All right. Sir, please come
09:17:42 12 forward. You'll need to be re-sworn today, a new day.

09:17:45 13 **WILLIAM E. LONGO, Ph.D.,**
09:17:45 14 having been first duly sworn by the deputy clerk, testified:

09:17:45 15 **DIRECT EXAMINATION CONTINUED**

09:18:02 16 THE COURT: Further inquiry on behalf of
09:18:06 17 Plaintiff, Mr. Lanier.

09:18:07 18 MR. LANIER: Please, your Honor. May it
09:18:08 19 please the Court. Good morning, ladies and gentlemen. Good
09:18:10 20 morning, Counsel and clients.

09:18:11 21 BY MR. LANIER:

09:18:12 22 Q Dr. Longo, what I'd like to do is give you and the
09:18:14 23 Court and the jury an idea of what we need to cover with
09:18:18 24 you, we hopefully can get done pretty close to lunchtime.
09:18:23 25 Okay?

09:18:23 1 A That would be fine, thank you.

09:18:25 2 Q I'm calling this Science Road. This is the road
09:18:25 3 we're going to cover with you. We're going to make a stop
09:18:29 4 at a place I'm calling dusty powder. Then we're going to
09:18:32 5 talk about the rigged tests. Along the way we're going to
09:18:35 6 throw up some terms, I want to be able to write them onto a
09:18:40 7 sheet so I've got them to use back with other witnesses
09:18:43 8 during the trial. We're going to talk about your work on
09:18:45 9 figuring out the plaintiffs' exposure, and then hopefully
09:18:51 10 our road ends at scientific truth.

09:18:53 11 So with that as the road we'll follow this
09:18:55 12 morning, are you ready to go?

09:18:58 13 A I am, thank you.

09:18:59 14 Q All right. First thing I want to do is we'll do
09:19:03 15 that first stop, or just basically discuss the idea of this
09:19:06 16 being Science Road. And so within the framework of that,
09:19:11 17 our stop on Science Road is one where we have discussed who
09:19:15 18 you are and what you do a little bit with the jury
09:19:19 19 yesterday, but this gives you a chance to go into a little
09:19:23 20 more detail, okay?

09:19:24 21 A That would be fine.

09:19:25 22 MR. LANIER: We have your CV, which is, your
09:19:29 23 Honor, was marked as Plaintiffs' Exhibit 8219, we displayed
09:19:35 24 it yesterday, but without going into all of it, I'd like to,
09:19:38 25 your Honor, move it into evidence so that the jury will have

09:19:41 1 it in the back and be able to look at it should they deem it
09:19:45 2 useful. Plaintiffs' 8219, move into evidence.

09:19:49 3 THE COURT: Was received yesterday.

09:19:51 4 MR. LANIER: Okay, thank you, your Honor.

09:19:53 5 Q (By Mr. Lanier) So in this regard, one of the
09:19:56 6 things that was interesting to me is that I discussed with
09:19:58 7 you -- the jury yesterday in openings, some of the different
09:20:01 8 kinds of work you have done. And the work you have done
09:20:05 9 included some pretty diverse folks.

09:20:12 10 A Yes, sir.

09:20:14 11 Q Just so the jury's got a feel. Give us one of the
09:20:16 12 most interesting things you've done.

09:20:20 13 A I guess a couple of them there would be, is the
09:20:23 14 Center for Disease Control, the United States Air Force,.

09:20:28 15 Q Let's pick the Air Force. What did you do for
09:20:30 16 them?

09:20:31 17 A Well, I can't tell you everything I did for them,
09:20:35 18 it's still classified. But what made it interesting is that
09:20:39 19 we were doing a type of microscopic jumper cables to reroute
09:20:47 20 around a particular device. So think about going to do a
09:20:53 21 split off something where you want to put the power off of
09:20:57 22 something and put it to something else, you put a jumper
09:21:00 23 cable on it, but we were doing this in the microscopic
09:21:04 24 world, making it out of platinum so that we could bypass
09:21:07 25 certain parts.

09:21:08 1 Every day they would -- we had our laboratory in
09:21:11 2 Raleigh. Every day a U.S. Air Force jet would land. They
09:21:17 3 would get out of the plane just like in the movies. They
09:21:20 4 had a brief case with a sample in it that was handcuffed
09:21:23 5 with his hand. They had security, they never let that out
09:21:27 6 of their sight. At the end of the day they'd go back to the
09:21:29 7 plane and do it all over again the next day. That probably
09:21:33 8 was the most interesting thing we've done in all our work.

09:21:37 9 Q So you've done work beyond just asbestos over the
09:21:39 10 30 years?

09:21:40 11 A Oh, yes. Semiconductor work, analysis U.S.
09:21:45 12 Treasury, all types of diverse things other than asbestos.

09:21:50 13 Q All right. We don't have a lot of time, but just
09:21:52 14 to give the jury a flavor, you told us the Air Force. What
09:21:58 15 did you do for the U.S. Treasury?

09:22:00 16 A That's what we talked a little bit about yesterday
09:22:00 17 where they wanted to -- when they were coming out with the
09:22:03 18 new twenty-dollar bill where they changed the ink, they
09:22:06 19 changed the paper. They wanted to see how far the inking of
09:22:11 20 the paper penetrated into the paper. It's all about how to
09:22:15 21 deal with forgeries, so they wanted to fully characterize
09:22:18 22 all the new process.

09:22:20 23 Q And did they like give you a bunch of
09:22:22 24 twenty-dollar bills to play with?

09:22:25 25 A No. I was saying that yesterday. They were

09:22:26 1 smarter than we were. It came in the regular mail, and we
09:22:30 2 thought -- we were going there's got to be \$20,000 in here.
09:22:33 3 It was all shredded into little strips.

09:22:37 4 Q All right. With an understanding of that, before
09:22:40 5 I leave Science Road, I guess one other thing is, Mr. Bicks
09:22:44 6 said that we would not bring a geologist, you and I talked
09:22:48 7 about that yesterday. You are not a geologist; is that fair
09:22:52 8 to say?

09:22:52 9 A That's fair to say. I'm a material scientist
09:22:54 10 engineer.

09:22:56 11 Q The jury heard from Dr. Alice Blount yesterday,
09:23:00 12 Ph.D. in geology. But beyond that, you've got a lot of
09:23:05 13 different people who work for you, or work at your company
09:23:08 14 with different specialties; is that right?

09:23:11 15 A That is right.

09:23:12 16 Q And have you prepared a report, a final report in
09:23:16 17 this case?

09:23:18 18 A Yes, sir, I have.

09:23:21 19 Q And your final report, is it the -- entitled,
09:23:28 20 Supplemental Expert Report and Analysis of J&J Baby Powder
09:23:34 21 and Valeant Shower to Shower Talc Products for Amphibole
09:23:39 22 Asbestos, March 11th, 2018?

09:23:42 23 A Yes, sir.

09:23:47 24 MR. LANIER: Your Honor, we would move
09:23:49 25 Plaintiffs' Exhibit 6718, which is that final report, into

09:23:52 1 evidence.

09:23:53 2 MR. DUBIN: Your Honor, I have no objection
09:23:56 3 to this being used for demonstrative purposes, but it's an
09:23:58 4 expert report, it shouldn't go into evidence.

09:24:01 5 THE COURT: All right. We'll receive it for
09:24:03 6 demonstrative purposes. I need a copy of your exhibits.

09:24:08 7 MR. DUBIN: What was the number, Mark?

09:24:11 8 MR. LANIER: It's Plaintiffs' Exhibit 6718.
09:24:14 9 I apologize, your Honor, you need this.

09:24:16 10 THE COURT: I need to see the exhibits that
09:24:18 11 you're -- if that's the only one you have.

09:24:24 12 MR. LANIER: No, I've got more. Monica's got
09:24:31 13 everything.

09:24:32 14 Q (By Mr. Lanier) Okay. So the jury can see what
09:24:36 15 it looks like, it's thick in a notebook. But this is your
09:24:40 16 final report. I assume that means you did drafts as well?

09:24:46 17 A Yes, sir. We did early -- early ones that we put
09:24:50 18 out and then went back and caught a few of the mistakes.

09:24:56 19 Q You checked your homework and you got it in final
09:25:00 20 form for this jury; is that fair?

09:25:02 21 A Yes, sir, we believe so.

09:25:03 22 Q And if the jury has a chance to look through this,
09:25:06 23 or we look through this, have you actually taken pictures of
09:25:10 24 things like -- this is on page 199 that I'm displaying right
09:25:15 25 now?

09:25:15 1 A Yes. That's one of the tremolite asbestos bundles
09:25:19 2 that was found in one of the talc samples. This is a
09:25:23 3 photograph from the transmission electron microscope where
09:25:26 4 we can take pictures of what we see.

09:25:29 5 Q Is that -- that's that microscope that's got the
09:25:33 6 gun that shoots down and --

09:25:35 7 A Yes.

09:25:35 8 Q You described yesterday?

09:25:37 9 A Yes, that's one of them.

09:25:38 10 Q And I'm going to get to our term sheet. I'll go
09:25:44 11 on and off on that as we go along, but you've just used a
09:25:50 12 term that a lot of us may not be familiar with. You said
09:25:53 13 that's a tremolite bundle?

09:25:56 14 A Yes.

09:25:57 15 Q When you talk about something being a bundle, what
09:26:02 16 do you mean?

09:26:05 17 A It means that when we do this analysis, we're
09:26:08 18 seeing two types of asbestos structures, either a single
09:26:13 19 fiber, so it's just fiber by itself, or if we have two or
09:26:18 20 three fibers that are sticking together, we call those
09:26:23 21 bundles.

09:26:24 22 And what happens is in our world when we do these
09:26:28 23 analyses, you can have bundles of fibers, it sort of looks
09:26:34 24 like copper cabling on a conductor, that's how this is all
09:26:39 25 formed in the ground. And way back when these rules were

09:26:43 1 developed, we could all agree as microscopists that it was
09:26:47 2 one bundle. Where it got tricky is when people tried to
09:26:50 3 say, okay, in this bundle there's 25 fibers.

09:26:52 4 Nobody could ever agree on how many fibers, but
09:26:56 5 that's what a bundle. It's multiple fibers. And that's how
09:27:00 6 it's formed in the ground typically, is you get these
09:27:04 7 bundles. And then during the process of manufacturing or
09:27:06 8 milling, these bundles break apart at times and release
09:27:09 9 single fibers.

09:27:10 10 Q Okay. In that regard, the asbestos that you're
09:27:16 11 seeing here, it's called a tremolite kind of asbestos. I
09:27:22 12 made that note here, but is this a bundle?

09:27:26 13 A Yes. You can see how it steps up. Those are
09:27:29 14 different groups of fibers. So that particular fiber is
09:27:37 15 almost 10 micrometers long. In our world, we deal with
09:27:41 16 microns and micrometers, which is one-thousandth of a
09:27:44 17 meter -- excuse me, one-millionth of a meter.

09:27:46 18 So a meter is a little bit bigger than a
09:27:49 19 yardstick. And if you take that yardstick and evenly divide
09:27:54 20 it in 1 million pieces, each one of those would be a
09:27:58 21 micrometer. It's a little bit easier for me because -- I
09:28:02 22 got to get my glasses changed, but if you take your fingers
09:28:06 23 and just put them together where can still see light
09:28:10 24 through, believe it or not, that's 1 millimeter in distance.

09:28:13 25 If you take that millimeter, a little slice where

09:28:16 1 you can see the light, and slice it 1,000 times, that's a
09:28:19 2 micrometer. So this particular case we have a bundle that
09:28:23 3 is almost 10 micrometers in length, it's 9.7. And then the
09:28:28 4 width of it is 1.95 micrometers, but that's not one
09:28:33 5 structure, that's multiple fibers all stacked together.

09:28:37 6 Q Okay. So these are pictures that you took, where
09:28:42 7 did this picture come from?

09:28:44 8 A That came out of sample 65329-041, which was one
09:28:51 9 of the Johnson & Johnson contain -- Johnson & Johnson Baby
09:28:54 10 Powder samples that your law firm sent us.

09:28:59 11 Q And I think the record will indicate we got it off
09:29:04 12 of eBay, or at least that's what we've told you, or is this
09:29:07 13 one of the eBay purchases?

09:29:09 14 A That's what you told us. That's what's on our
09:29:12 15 chain of custody.

09:29:15 16 Q Tremolite. Is this tremolite asbestos?

09:29:17 17 A Yes, sir, it is.

09:29:18 18 Q Is this in an asbestos form as it's called?

09:29:22 19 A Because it is a bundle, by definition that is an
09:29:27 20 asbestiform.

09:29:27 21 Q Okay. And if we wanted to continue to go through
09:29:32 22 this, would we be able to find photograph after photograph
09:29:36 23 of different things that you have taken and substantiate
09:29:40 24 your findings?

09:29:41 25 A Yes.

09:29:42 1 Q So, for example, I've got a page 223.

09:29:50 2 A That would be another bundle. Now, if you look
09:29:53 3 closely at the end, you can see multiple fibers. So you
09:30:04 4 have one fiber, it's touching, you know, you have to look at
09:30:09 5 how the microscopist designated that, but that is another
09:30:12 6 tremolite, either fiber or bundle, depending on how the
09:30:18 7 microscopist interpreted that.

09:30:20 8 Q And this is from that same sample?

09:30:22 9 A Yes, sir.

09:30:23 10 Q All right. Now, in addition to your report that
09:30:29 11 I've marked as Plaintiffs' Exhibit 6718, are there other
09:30:36 12 reports that you've done in this case that will hopefully
09:30:39 13 we'll do in the interest of time?

09:30:41 14 A Yes.

09:30:41 15 Q All right. Great. Then let's go down Science
09:30:46 16 Road, and let's make the next stop at dusty powder. And
09:30:49 17 this is us basically picking up where we were yesterday.
09:30:52 18 Okay.

09:30:53 19 A Yes, sir.

09:30:54 20 Q So, yesterday the jury had the benefit of seeing
09:30:59 21 the video as we were getting ready to end the day.

09:31:04 22 A Yes.

09:31:05 23 Q And we had two different clips out of that video.
09:31:08 24 One of the adult and one of the baby, right?

09:31:12 25 A That is correct.

09:31:15 1 Q Now, I got into that with you by looking at Mr.
09:31:19 2 Bicks' overhead slide number 21. Where he told the jury
09:31:24 3 that talc is in every day products. Do you recall that?

09:31:30 4 A I do.

09:31:33 5 Q Based upon your experience, have you ever seen
09:31:37 6 anyone taking a cancer drug, whether it's got talc in it or
09:31:42 7 not, which I understand you say they don't all have. But
09:31:46 8 have you ever seen one exposed to the kind of dust that you
09:31:50 9 were finding in your experiment with baby powder?

09:31:56 10 A No, not unless you crush that, a lot of those
09:32:00 11 pills up and sprinkled it on yourself. It's a completely
09:32:05 12 different type of exposure route.

09:32:08 13 Q Same for any other type of pill that might have
09:32:10 14 talc in it, should it have it?

09:32:14 15 A No, that wouldn't, in my opinion, would not be
09:32:16 16 what I would call an exposure at all, typically what you
09:32:20 17 would see with just baby powder, talcum powder, where you're
09:32:24 18 sprinkling a very fine powder, which makes it naturally
09:32:28 19 airborne when that happens as you saw on the videos.

09:32:32 20 Q If you did Tyndall lighting and we took the old
09:32:35 21 kind of gum that had this on the inside of the foil, do you
09:32:40 22 think that you would be showing as much dust by chewing a
09:32:46 23 piece of gum?

09:32:47 24 A No.

09:32:48 25 Q Eating something cooked in olive oil or pouring it

09:32:51 1 on your salad?

09:32:53 2 A I don't believe so, no.

09:32:55 3 Q Deodorant, sunblock, soap?

09:32:59 4 A No, those are not dusty products.

09:33:02 5 Q Now, other powder products, perhaps?

09:33:06 6 A Yes. If you're using talcum powder the same way,
09:33:10 7 yes, they're going to be dusty.

09:33:13 8 Q Makeup, perhaps?

09:33:15 9 A Perhaps.

09:33:24 10 Q So we would need to hear testimony whether or not
09:33:27 11 all makeup has talc in it?

09:33:30 12 A That I don't know.

09:33:30 13 Q Okay. None of the makeup you use?

09:33:37 14 A You said you weren't going to bring that up.

09:33:41 15 Q All right.

09:33:42 16 A No, sir.

09:33:49 17 Q Now, you also did a report from your below the
09:33:55 18 waist; is that right?

09:33:57 19 A That is correct.

09:33:59 20 Q And so if we take your video and look at it in
09:34:04 21 detail, when you did that video and the man was standing
09:34:09 22 there and he had the respirator on, the breather, were you
09:34:13 23 able to take measurements of the actual asbestos in the air?

09:34:21 24 A Yes. If you look at that video and looked at it
09:34:26 25 closely, you can see what looked like little black cans

09:34:30 1 sitting up around his head area, shoulder area. And we also
09:34:33 2 have sitting back away from him like a feed in the room, and
09:34:37 3 that was taking an air sample. So during that whole study,
09:34:41 4 I think we let it run for five minutes, a few seconds of
09:34:46 5 applying the powder and then the air samples run for an
09:34:50 6 additional amount of time. Those air filters were
09:34:53 7 collecting the particles in the air.

09:34:55 8 Once we collected those air filters, we took them
09:34:59 9 to the laboratory and analyzed them using standard federal
09:35:03 10 protocols for determining occupational exposures to airborne
09:35:08 11 asbestos fibers.

09:35:10 12 Q Okay. The jury will see, when we get to it later,
09:35:14 13 that you found different concentrations of asbestos in
09:35:20 14 different containers?

09:35:22 15 A Correct.

09:35:24 16 Q Which container and which one did you use when you
09:35:28 17 did this test?

09:35:30 18 A That container was the one that was a post-1953,
09:35:41 19 somewhere '53 to '64, because of the wording on it. And it
09:35:46 20 had a concentration -- it was our highest concentration that
09:35:49 21 we found, which is 15 million asbestos fibers in bundles per
09:35:55 22 gram of Johnson Baby Powder. That was in that bottle.

09:36:01 23 Q 15 million fibers in bundles per gram. So if -- I
09:36:07 24 don't have my little baby powder up here, oh, Juan's got
09:36:12 25 them?

09:36:15 1 MR. WILSON: No, I don't have them.

09:36:26 2 Q (By Mr. Lanier) My gram passed away 20 years ago.

09:36:28 3 What is a gram?

09:36:30 4 A A gram is a unit of measurement, it's the metric
09:36:34 5 system. Give you kind of an idea. An ounce is

09:36:37 6 approximately 28.3 or 4 grams in 1 ounce. So if you have --

09:36:43 7 I think your little bottle was an ounce and a half, if I

09:36:49 8 remember correctly.

09:36:50 9 Q Okay.

09:36:50 10 A So if you have 15 million per gram, and a gram and
09:37:02 11 a half would be approximately, let's see 28, 14, 30, 38, 42

09:37:11 12 grams. So an ounce and a half at that concentration per

09:37:18 13 gram would be approximately 630 million asbestos fibers in

09:37:24 14 bundles.

09:37:25 15 Q In the little bottle?

09:37:27 16 A In the little bottle.

09:37:37 17 Q Now, you said this was your findings. I want to

09:37:43 18 make sure the jury is clear on this so we're not pulling any

09:37:49 19 punches. This was based on what you did worst case

09:37:54 20 scenario. Is that fair to say?

09:37:56 21 A It was our highest concentration. Don't know if

09:37:59 22 it's the worst case scenario because we haven't analyzed

09:38:03 23 everything. You may have higher ones that you can call

09:38:07 24 higher concentration, but then you may have lower

09:38:10 25 concentrations. So it depends on which particular bottle

09:38:13 1 you're using and how much is in it.

09:38:15 2 Q Okay. So I wanted you to have it at an extreme so
09:38:19 3 that we could do some math. So you used the highest that
09:38:22 4 you tested, and here's my question for the jury and the
09:38:25 5 judge and the record.

09:38:26 6 If based upon the highest concentration in that
09:38:31 7 little bottle you've got 630 million asbestos fibers in
09:38:36 8 bundles, if instead you only used a bottle that only had
09:38:42 9 half as much, could you just divide that in half and then
09:38:46 10 say if it's half as much --

09:38:49 11 A Yes.

09:38:49 12 Q -- then it's 315 million in the little bottle?

09:38:54 13 A Correct.

09:38:57 14 Q If it's a tenth as much, is it 63 million?

09:39:03 15 A A tenth of much, yes. You just divide by the
09:39:10 16 number depending upon the concentration.

09:39:12 17 Q Okay. And by the same token, we're now -- you've
09:39:15 18 done this for the little chiquita bottle, the small one,
09:39:21 19 correct?

09:39:21 20 A Yes.

09:39:22 21 Q If instead our ladies were buying the larger
09:39:27 22 bottle, that's the cheaper way to buy it, can you do the
09:39:33 23 math extended out that way with the larger bottle?

09:39:39 24 A I need to ask you a question. Some people call
09:39:42 25 the 14-ounce the larger bottle, but it is the 22-ounce. So

09:39:47 1 which one would you like me to do?

09:39:49 2 Q Let's do both. So if it's a 14-ounce bottle in
09:39:54 3 the bottle itself, and we'll use the highest concentration
09:39:58 4 knowing that we can always do the math to reduce it down.

09:40:02 5 But the highest concentration in a 14-ounce
09:40:05 6 bottle, how many fibers?

09:40:19 7 A 5.9 billion.

09:40:21 8 Q So that's 5.9 billion?

09:40:29 9 A Yes, sir.

09:40:33 10 Q And then -- and that's the 14-ounce bottle.
09:40:37 11 What's the size of the other one you said?

09:40:39 12 A I believe the largest bottle was 22 ounces, if I
09:40:43 13 recall correctly.

09:40:46 14 Q All right. And if it's a 22-ounce bottle, how
09:40:52 15 many fibers, highest concentration, worst case scenario so
09:40:56 16 we can do the math to reduce it down as we want to, but how
09:41:01 17 many fibers in that, asbestos fibers in bundles?

09:41:05 18 A That would come out to 9 billion asbestos
09:41:09 19 structures in a 22-ounce bottle based on the finding of
09:41:13 20 15 million per gram.

09:41:17 21 Q One bottle?

09:41:18 22 A Yes, sir.

09:41:21 23 Q Preview just a moment. Does the testing technique
09:41:28 24 that Johnson & Johnson had used for them, is it able to pick
09:41:34 25 up these many generally?

09:41:39 1 A Generally, because of the size they're using,
09:41:43 2 generally, no.

09:41:45 3 Q Now, do you ever have anything that indicates that
09:41:51 4 people have this many asbestos fibers from chewing a piece
09:41:55 5 of gum or taking a pill, that they inhale into their body or
09:42:01 6 sprinkle around their genitals?

09:42:03 7 A No, that doesn't seem reasonable. I don't know
09:42:09 8 any information that would suggest that.

09:42:11 9 Q All right. We've got -- before we leave dusty
09:42:14 10 powder, we got your below the waist report.

09:42:19 11 MR. LANIER: Your Honor, we've got it marked
09:42:21 12 as Plaintiffs' Exhibit 5862.

09:42:25 13 Q (By Mr. Lanier) Did you do a full report that's
09:42:26 14 got all of this data?

09:42:29 15 A Yes, here it is.

09:42:32 16 Q Thank you.

09:42:34 17 MR. LANIER: We'd offer it into evidence,
09:42:35 18 your Honor, as testing data, not simply a report.

09:42:39 19 MR. DUBIN: Again, your Honor, I have no
09:42:41 20 objection to it being used for demonstrative purposes, but
09:42:43 21 it shouldn't be admitted into evidence.

09:42:46 22 THE COURT: Will be received for that
09:42:47 23 purpose.

09:42:48 24 MR. LANIER: Thank you, your Honor.

09:42:49 25 Q (By Mr. Lanier) Okay. Let's move down the road.

09:42:51 1 Dusty powder. I want to talk now about rigged tests. Okay?

09:43:01 2 A Okay.

09:43:02 3 Q Have you had a chance to look at a number of the
09:43:07 4 tests done by Johnson & Johnson or their surrogates?

09:43:14 5 MR. DUBIN: I'm going to object to the
09:43:16 6 surrogate portion of that question. That's argument. Lacks
09:43:20 7 foundation.

09:43:21 8 THE COURT: As to the word?

09:43:23 9 MR. DUBIN: Yes.

09:43:24 10 THE COURT: Sustained. Please choose another
09:43:26 11 word.

09:43:28 12 Q (By Mr. Lanier) By themselves or by the folks they
09:43:30 13 paid to do the work?

09:43:33 14 A I've looked at their testing protocols or recipes,
09:43:37 15 and then what their consulting labs that they hired to do
09:43:44 16 their test, what their recipes were and how it fit with what
09:43:48 17 we did.

09:43:49 18 Q All right. Let's make a stop here and let's
09:43:51 19 discuss these tests, please. In this regard, let's start
09:43:59 20 out with just some simple things.

09:44:01 21 Yesterday do you remember I was doing that chart
09:44:05 22 with you of things Mr. Bicks said versus the truth?

09:44:09 23 A Yes, sir. I saw that you did that.

09:44:11 24 Q I've got now the typed up final copy of the
09:44:15 25 transcript from our court reporter, and she stayed up until

09:44:19 1 four in the morning to do. And on page 830, this is Mr.

09:44:24 2 Bicks trying to tell the jury how often they test this

09:44:28 3 stuff.

09:44:29 4 He says: You'll see that talc comes off of a
09:44:33 5 conveyer belt, and on that conveyer belt they create samples
09:44:37 6 for testing. At the bottom would be the sample. How do
09:44:42 7 they do it? Every single hour of that conveyer belt they
09:44:48 8 take an amount of the talc. Every hour, every shift, every
09:44:53 9 working day they do this.

09:44:59 10 Take a look at a calendar. You'll see done every
09:45:02 11 day, every shift, every working hour. Over a hundred
09:45:05 12 thousand different samples taken, and it wasn't just one
09:45:09 13 month. It's every month for years. Do you see that?

09:45:16 14 A Yes.

09:45:22 15 Q So we've got Mr. Bicks saying hundreds of
09:45:34 16 thousands of -- give the impression, I think he's saying
09:45:45 17 that -- a month, but hundreds of thousands of tests every
09:45:51 18 day, every hour. Do you remember that?

09:45:54 19 A I do.

09:45:56 20 Q Tell the jury what they were testing every day,
09:46:00 21 every hour.

09:46:02 22 A It wasn't just for asbestos. They have all kinds
09:46:06 23 of tests; color, bacteria tests, odor. They did a lot of
09:46:16 24 tests, but a lot of it was to characterize what they were
09:46:20 25 digging out. Asbestos test was different. That was not

09:46:23 1 done every day, hundreds of thousands. Their TEM analysis,
09:46:27 2 as far as I can tell throughout those years, was 360.

09:46:32 3 That's all I can verify right at the moment.

09:46:38 4 Q For all of those years?

09:46:41 5 A That's the only, yes, that's the only amount I can
09:46:43 6 verify. If they have some more they haven't told us about.

09:46:48 7 Q This idea that they were testing, have you ever
09:46:52 8 seen any of those records that indicate hundreds of
09:46:56 9 thousands of tests for asbestos as opposed to what color is
09:47:00 10 it, does this smell, does it have bacteria?

09:47:05 11 A No, I haven't seen anything.

09:47:08 12 Q Have you ever seen anything that indicates they
09:47:10 13 had on-site at the mine the equipment to even begin to do
09:47:16 14 the kind of testing that has to be done in a lab for
09:47:19 15 asbestos?

09:47:21 16 A I don't believe they had their own transmission
09:47:25 17 electron microscope. I don't know if they had polarized
09:47:27 18 light microscopes or not. That doesn't take up a lot of
09:47:32 19 room. But I don't believe they have their own transmission
09:47:34 20 electron microscope at the mine.

09:47:37 21 Q And then Mr. Bicks also told the jury that you
09:47:43 22 will see in evidence from NIOSH, the Vermont talc, studies
09:47:51 23 going back to the early 1900s have shown the Vermont talc
09:47:56 24 deposits contain no asbestos. Do you see that?

09:48:03 25 A Yes.

09:48:05 1 Q Sir, aside from what Alice Blount just testified
09:48:08 2 to, do you have independent knowledge of whether or not
09:48:12 3 Vermont talc has ever been shown to have asbestos going back
09:48:16 4 to the early 1900s?

09:48:19 5 MR. DUBIN: Your Honor, I'm going to object.
09:48:20 6 This is beyond the scope of the witness' expertise. The
09:48:23 7 quote that was asked, what geologic studies show since the
09:48:26 8 1900's, the witness is not a geologist.

09:48:30 9 THE COURT: Overruled.

09:48:31 10 A Back to the 1900s. I'm not sure at the 1900s, but
09:48:36 11 there's been some optical microscopy work done even as early
09:48:42 12 as the '30s and '40s, where they're looking at slices of
09:48:48 13 mined rock. But as for actual transmission electron
09:48:54 14 microscope analysis, the first commercial microscope sold in
09:48:59 15 this country, an RCA, didn't really come under the market
09:49:04 16 until the late 1940s.

09:49:06 17 Q So if you go back to the early 1900s, did it even
09:49:11 18 have the electron microscope to see the asbestos?

09:49:17 19 A If you're characterizing the early 1900s as 1940,
09:49:24 20 no.

09:49:24 21 Q And by the same token, if we look at this -- well,
09:49:39 22 let me make my note. This is -- what kind of microscope,
09:49:47 23 again, that you would need to see these pictures you've got?

09:49:51 24 A To duplicate what we've done and the tests they're
09:49:55 25 doing or TEM, it's a transmission electron microscope.

09:50:02 1 Q All right. Brief testing. I want to ask you
09:50:06 2 about another document that I referenced with the jury
09:50:08 3 yesterday, and I need you to help explain some of the
09:50:11 4 scientific terms.

09:50:12 5 MR. LANIER: Your Honor, we move into
09:50:13 6 evidence Plaintiffs' Exhibit 73.

09:50:19 7 MR. DUBIN: That's previously objected to,
09:50:21 8 your Honor.

09:50:22 9 MR. LANIER: May I approach?

09:50:24 10 MR. DUBIN: Lacks foundation, not part of his
09:50:29 11 reliance list. Same issue.

09:50:32 12 THE COURT: What we took up this morning?

09:50:33 13 MR. LANIER: Yes, your Honor.

09:50:34 14 MR. DUBIN: Again, I don't think he has a
09:50:36 15 foundation to admit it at this point, irrespective of this
09:50:40 16 witness, pursuant to your Honor's comments this morning. I
09:50:44 17 believe he asked a question of scientific concepts.

09:50:48 18 THE COURT: Subject to prior rulings, the
09:50:49 19 Court will persist in its prior ruling.

09:50:52 20 MR. LANIER: Thank you, your Honor.

09:50:53 21 Q (By Mr. Lanier) So, sir, this is the folks who
09:50:58 22 bought the mine from Johnson & Johnson and continued to do
09:51:03 23 some testing. You're familiar with Julie Pier?

09:51:07 24 A Yes, sir.

09:51:09 25 Q And it's talking about who Johnson & Johnson was

09:51:12 1 having doing their testing. You are familiar with Johnson &
09:51:16 2 Johnson using RJ Lee to test their asbestos?

09:51:20 3 A I am.

09:51:22 4 Q Julie Pier writes in this: RJ Lee has a different
09:51:26 5 approach to the whole thing. They believe if you can find a
09:51:33 6 hint of a diffraction pattern from another mineral while
09:51:38 7 you're looking at the amphibole fiber, you can call the
09:51:41 8 fiber transitional and not truly amphibole.

09:51:47 9 Now, you understand that sentence?

09:51:51 10 A I do.

09:51:52 11 Q I'm going to be talking to some later witnesses
09:51:54 12 about it, and I want to make sure I've got the terms down so
09:51:58 13 we understand it and we can hold those later witnesses of
09:52:01 14 the company to it. Okay. So you got to help us understand
09:52:06 15 this. We'll be going back to our term sheet to do it.

09:52:10 16 A hint of a diffraction pattern. You've got to
09:52:16 17 teach us what a diffraction pattern is.

09:52:20 18 A If you go back to the photographs you were
09:52:23 19 showing, and you had one that looked like a bunch of dots
09:52:27 20 right behind the fibers.

09:52:30 21 Q Yes.

09:52:30 22 A That's a diffraction pattern. It's called in TEM,
09:52:34 23 SAED, selected area electron diffraction.

09:52:42 24 Q What does it mean?

09:52:43 25 A It means that, say this is your fiber in the TEM.

09:52:48 1 Your electron beam is coming down to the fiber, and because
09:52:52 2 you can see the image of some of those inside the fiber, the
09:52:56 3 electrons are going through the fiber, some are stopped.
09:52:59 4 But because these fibers are crystalline, everybody's seen a
09:53:04 5 prism where light comes in, and they'll break it into
09:53:09 6 colors. So electrons come in, and because of these
09:53:15 7 crystalline structures in there, it causes the electrons to
09:53:20 8 be scattered in particular directions because you have these
09:53:25 9 planes of atoms that become the crystal. So it hits it and
09:53:29 10 goes off a particular plane, it gives you a precise electron
09:53:35 11 diffraction pattern that we can measure and determine what
09:53:37 12 the crystal is.

09:53:38 13 Q Okay. I got to be honest with you.

09:53:41 14 A Didn't make any sense?

09:53:42 15 Q I'm kind of lost.

09:53:44 16 MR. LANIER: Your Honor, could he have
09:53:45 17 permission, if I pull the tablet around, to draw and explain
09:53:48 18 this --

09:53:49 19 THE COURT: Sure.

09:53:50 20 MR. LANIER: -- so we got a record of it?

09:53:54 21 Mr. Longo, Dr. Longo, I'd like you to -- you've got a mic
09:54:03 22 on, so it won't mess things up. Would you come explain that
09:54:07 23 to the jury? Maybe you can do it here on the ELMO, just
09:54:12 24 draw it on the ELMO. Would that be all right, your Honor?
09:54:15 25 And then I'll move the tablet, I think the ELMO would be

09:54:19 1 easier. Would you come explain this with, I don't know if
09:54:21 2 you draw worth a hill of beans?

09:54:24 3 A I don't.

09:54:25 4 Q (By Mr. Lanier) I'll give you clean sheet.

09:54:27 5 Unless you want me to try to do the drawing. I want you to
09:54:31 6 come down to the ELMO, please.

09:54:33 7 (The witness left the stand.)

09:54:35 8 Q (By Mr. Lanier) And show the jury, it's extremely
09:54:38 9 important that they understand what this sentence is, so I
09:54:40 10 would like you to show this to the jury. What we're
09:54:44 11 questioning is, what is a diffraction pattern?

09:54:48 12 A It would be helpful in those photographs you were
09:54:51 13 showing.

09:54:51 14 Q Of your report?

09:54:53 15 A You'll look on there like behind the fibers or
09:54:58 16 bundles that shows a pattern, just so I can have a starting
09:55:03 17 point of what you were showing.

09:55:10 18 Q Okay. I showed page 199. Would that be useful?

09:55:15 19 A Then right behind it.

09:55:17 20 Q Oh.

09:55:21 21 A This is diffraction pattern.

09:55:21 22 Q Okay.

09:55:22 23 A This is from -- that's the chemistry.

09:55:24 24 Q Okay.

09:55:25 25 A This is the -- a lot of things are going on when

09:55:28 1 this high energy electron beam hits the fiber. Not only do
09:55:32 2 you -- can see the fiber, but off into a different area is a
09:55:37 3 diffraction pattern that's being formed at the same time, we
09:55:42 4 just can't see it until we align the microscope to bring it
09:55:46 5 into focus.

09:55:47 6 This -- these dots that you have here and here and
09:55:53 7 here, is from the crystalline planes, like if you just look
09:55:59 8 at a crystal that's causing it to diffract or changes
09:56:02 9 directions, and it changes directions in a pretty standard
09:56:06 10 way.

09:56:06 11 So you can take these diffraction patterns, and
09:56:10 12 you can tell if you have an amphibole or whatever we're
09:56:13 13 interested in, asbestos fibers. So the way that happens,
09:56:17 14 I've drawn two fibers. Just pretend they're the same
09:56:21 15 fibers.

09:56:22 16 So an electron beam is coming like this and over
09:56:25 17 here like this. And in this one over here, because we're
09:56:31 18 looking at it down here, we can see that fiber. Because the
09:56:35 19 electrons are going through on the side, what we can't see
09:56:39 20 over here until we do something is we're developing these
09:56:44 21 dots.

09:56:54 22 And this is because at the same time that electron
09:56:58 23 beam is going through that fiber, those crystals in there
09:57:01 24 causing it to be diffracted, you just can't see it until you
09:57:05 25 change the conditions of the microscope, and we go from --

09:57:11 1 where's that fiber you have? There we go. We go from this,
09:57:18 2 on this side, flip a switch on the microscope, and then we
09:57:22 3 can see this. So this is our diffraction pattern. And it's
09:57:26 4 very precise in what we do. Is that better?

09:57:29 5 Q Yes, much better, thank you, I appreciate it.

09:57:33 6 (The witness resumed the stand.)

09:57:36 7 Q (By Mr. Lanier) Not that I'm going to be able to
09:57:37 8 write that down in anyway that we'll remember two weeks from
09:57:41 9 now, but I'm going to try. Diffraction pattern. That's
09:57:45 10 where you kind of flip the switch and look at the dots?

09:57:51 11 A The pattern is always there. It's -- believe it
09:57:55 12 or not, in advance x-ray diffraction you have to calculate
09:58:01 13 that, and it's in a place called reciprocal space, one over
09:58:07 14 space. The only graduating class I got to see, and it's a
09:58:12 15 gift to understand that concept.

09:58:13 16 So it's always there, but you can change the
09:58:16 17 conditions of the microscope to bring it into where you can
09:58:20 18 visualize it and record it.

09:58:22 19 Q All right. That gives us a start here. They
09:58:24 20 believe if you can find a hint of a diffraction pattern from
09:58:28 21 another mineral when you're looking at the amphibole fiber.
09:58:35 22 Define for us again what an amphibole fiber is in this
09:58:40 23 context.

09:58:40 24 A In this context, amphibole is a mineral that's
09:58:44 25 very common. It's a class of minerals. It's very common in

09:58:49 1 the earth's crust. But then we get down to what we call the
09:58:55 2 asbestos amphiboles, and those are the ones we're interested
09:59:01 3 in. So it's a type of amphibole asbestos.

09:59:04 4 Q And so the asbestos amphibole is what everybody's
09:59:11 5 looking for, it's what they're trying to figure out. If
09:59:14 6 it's an asbestos amphibole, is that another word for fiber?

09:59:20 7 A Fiber, bundle. As long as it meets the counting
09:59:23 8 criteria for the size we're looking at.

09:59:25 9 Q All right. So RJ Lee, the testing group, one of
09:59:29 10 them for the company, says if you can find a hint of a
09:59:34 11 diffraction pattern from another mineral while you're
09:59:37 12 looking at what might be an asbestos fiber, then you can
09:59:41 13 call the fiber transitional and not truly amphibole. What
09:59:47 14 does that mean to you?

09:59:50 15 A Well, I know that trick. If you go back to the
09:59:56 16 photograph of the fiber, or the bundle, you can see what
09:59:59 17 we're talking about here. Not the diffraction pattern, but
10:00:05 18 the fiber.

10:00:07 19 Okay. So here we have a fiber, and if I can come
10:00:12 20 back up I can show. This is --

10:00:15 21 MR. LANIER: Your Honor, can he come back up?

10:00:17 22 THE COURT: Sure.

10:00:18 23 MR. LANIER: Thank you.

10:00:18 24 (The witness left the stand.)

10:00:21 25 A In these samples, we don't just have asbestos

10:00:27 1 fibers or pieces of asbestos fibers, but we have talc too.
10:00:33 2 Even though we use this method to separate the talc from
10:00:38 3 potentially having asbestos in there, it's not 100 percent
10:00:41 4 efficient. It's about 98 or so, you're always going to find
10:00:45 5 some talc fibers down there.

10:00:47 6 Talc, and here's -- here's a talc plate. That's
10:00:54 7 right next to it. This particular one, ooh, I'm not even on
10:01:00 8 there.

10:01:00 9 Q No, it's not your fault. That's mine. All right.
10:01:05 10 So I want to write that in. This is talc right here?

10:01:09 11 A Talc plates. Here is the end of the asbestos.
10:01:13 12 And you notice it's got some weird kind of angles on it. On
10:01:18 13 top of this asbestos fiber is a talc plate. So these areas
10:01:27 14 that are sticking out is pieces of platy talc.

10:01:32 15 Remember, when we do this analysis and filter it
10:01:36 16 and do all the things we have to do, you're taking stuff
10:01:40 17 that's in three dimensions and putting it down on the
10:01:43 18 filter, so if you have fiber here and if you have a talc
10:01:48 19 plate up here you go on top of it.

10:01:50 20 If you take a diffraction pattern here, and we
10:01:55 21 make it a fine point just to get on there, you'll get what
10:01:58 22 you're supposed to get. You get down here, you'll get a
10:02:03 23 diffraction pattern that's primarily mostly from what it's
10:02:07 24 supposed to be from, plus some of the talc in there. So you
10:02:11 25 get some overlay over the diffraction patterns.

10:02:14 1 Q So you called this -- thank you, you can --

10:02:16 2 (The witness resumed the stand.)

10:02:18 3 Q (By Mr. Lanier) You call this a trick?

10:02:20 4 A Well, it's not so much a trick.

10:02:23 5 Q It was your word.

10:02:24 6 A I can't say what they're doing.

10:02:26 7 Q I'm not asking motive.

10:02:28 8 A I'm just saying if you're not careful, what
10:02:31 9 they're describing here will happen.

10:02:35 10 Q So if you've got an asbestos fiber, and I'll make
10:02:42 11 it red. You've got an asbestos fiber and has been mashed
10:02:55 12 down with some talc because you've mashed it down so you've
10:02:58 13 got talc over it.

10:03:03 14 Is there a way that a microscopist can maneuver
10:03:08 15 the process so it shows it not to be asbestos but shows it
10:03:14 16 to be talc?

10:03:16 17 A If you take a diffraction pattern with the talc on
10:03:19 18 top of the fiber you'll get some of that pattern mixed in,
10:03:23 19 so the whole pattern will look different. Or if you have
10:03:27 20 talc right next to it, you'll get scatter from that, or if
10:03:32 21 you tilt it in such a way you can do sort of the same thing.

10:03:35 22 Q Well, that's the next sentence here that I've
10:03:37 23 highlighted. The analyst told me when she's finds the
10:03:41 24 tremolite fiber -- that tremolite, that's the bad asbestos?

10:03:44 25 A That's asbestos. It's a fiber, so that's an

10:03:48 1 asbestos fiber.

10:03:49 2 Q When she finds the tremolite asbestos fiber, she
10:03:52 3 will tilt the stage until she can see a talc diffraction
10:03:58 4 pattern come into view. Now, what is, what is she --
10:04:07 5 explain that process, please.

10:04:11 6 A Well, normally your sample goes in, it's flat like
10:04:16 7 this. It's got we call zero tilt. Now, these microscopes
10:04:23 8 you can tilt the sample so we can go from zero to start off,
10:04:28 9 go to 5, 10, 25 is about the most.

10:04:31 10 So, remember, your electron beam is coming down
10:04:37 11 and you're putting a spot on it, then the diffraction
10:04:39 12 pattern comes underneath. If you don't keep this perfectly
10:04:44 13 lined while you tilt it or look what you're doing and tilt
10:04:47 14 it, if you've got a particle over here and you tilt it
10:04:50 15 enough, that diffraction pattern will be omitted and it will
10:04:56 16 strike some of that talc particle and you'll start getting
10:05:01 17 that mixed in with it.

10:05:03 18 So you can -- so if you were to tilt it in such a
10:05:06 19 way, you can start getting the electron beam hitting the
10:05:10 20 talc more than hitting the fiber because it's right next to
10:05:14 21 it.

10:05:14 22 Q All right. So if I got the beam coming down and
10:05:17 23 the arrows that I've done with blue, and it hits this red
10:05:20 24 asbestos, is it going to tell us that there's asbestos in
10:05:23 25 there, say, a tremolite fiber?

10:05:28 1 A Yes. You take the electron beam, which is spread
10:05:31 2 out because you can see everything because you're
10:05:35 3 concentrated to a point, and the machine can do that for you
10:05:39 4 by just changing the strength of the electromagnetic lenses,
10:05:43 5 you squeeze it more.

10:05:44 6 Q Now, if RJ Lee instead starts tilting and that
10:05:51 7 electron beam is coming down here instead, is it going to
10:05:56 8 show the talc instead of the asbestos?

10:05:59 9 A If you tilt it far enough and don't keep it
10:06:02 10 aligned or have it in the wrong place, yes, you can change
10:06:05 11 that diffraction pattern to show something else.

10:06:07 12 Q And then all of a sudden you can report it as
10:06:10 13 asbestos-free?

10:06:12 14 A I guess that's -- it looks like that's what
10:06:15 15 they're doing.

10:06:19 16 Q In fairness to the corporate representative, she
10:06:23 17 did say I am very skeptical of this. And you're not --
10:06:26 18 you're not doing anything about the motive, so I want you to
10:06:32 19 stay away that, but I want you to pick up the next sentence.

10:06:37 20 There is a lot of the scatter of the electrons,
10:06:39 21 and you can sometimes get interference in the diffraction
10:06:42 22 pattern from adjacent particles, especially at higher tilt.
10:06:48 23 Is that exactly what you were explaining to us?

10:06:52 24 A Yes, that's what I said. That's what you can do
10:06:54 25 with this.

Q All right. So as we continue then to look at this with different types of tests, and we've got now this test that we are considering, the RJ Lee tilt the sample. I want to shift to another one.

Mr. Bicks indicated to the jury in his opening that asbestos -- when you see asbestos you can see the fibers. Your Honor, I'm reading from page 820. Hard, long. If you get those on your skin they're prickly, they don't do what the talc does. Johnson & Johnson doesn't want asbestos in its talc, that's why it's tested. Why it was so careful, hired the best scientists.

Now, my first question to you about this is, honestly, these little tremolite fibers that are -- you're finding in the baby powder these tremolite asbestos fibers, are they really hard and long, they get on your skin and are prickly?

A I guess it's how you define hard and long, but in reality, the size of these fibers and bundles in the concentration, even though it is high for what we deal with, the concentration of asbestos compared to all the talc particles, you got to assume that for every asbestos fiber there's a million talc particles, the answer to your question is no. This is not the size or type of asbestos in this product that these concentrations, that you would ever feel it.

10:08:36 1 Q Is this the kind of thing if I sprinkle the baby
10:08:38 2 powder on me, I can do an asbestos test just by seeing if
10:08:42 3 it's prickly on my skin?

10:08:43 4 A No, that's not a recognized technique.

10:08:51 5 Q Well, I got some other techniques, let's look at.
10:08:57 6 One is, I'm going to show you a document.

10:09:01 7 MR. LANIER: Your Honor, we move into
10:09:02 8 evidence Plaintiffs' 1202. This is the document we
10:09:07 9 discussed also this morning.

10:09:10 10 THE COURT: Mr. Dubin.

10:09:11 11 MR. DUBIN: Again, same objection as this
10:09:13 12 witness. I don't think there's a ground to admit this
10:09:16 13 document with this witness per your Honor's ruling
10:09:19 14 previously of the scientific concepts.

10:09:23 15 THE COURT: Very well. Will be received
10:09:25 16 subject to the prior ruling.

10:09:27 17 Q (By Mr. Lanier) All right. Sir, 1202 is a
10:09:32 18 technical report, the Microscopy Analysis of Serpentine
10:09:39 19 Minerals in the Broughton Ore from Julie Pier, who wrote
10:09:47 20 that last document we looked at. This is back in January of
10:09:50 21 2001.

10:09:51 22 And she talks here on page 4, and says the Johnson
10:09:54 23 & Johnson procedure also utilizes a different prep procedure
10:10:00 24 in which the overall amount of product analyzed could be
10:10:05 25 easily overestimated, falsely lowering the asbestos content.

10:10:13 1 Do you see that?

10:10:16 2 A Yes, sir.

10:10:17 3 Q Now, I want to take a step back and make sure we
10:10:22 4 understand all of this. It shows Bain. Who is Bain, do you
10:10:27 5 know?

10:10:30 6 A I can't remember who Bain was.

10:10:32 7 Q All right. I think the records will reflect and
10:10:35 8 Johnson & Johnson will agree that's one of the companies
10:10:37 9 they use to test.

10:10:38 10 A Oh, that's right.

10:10:40 11 Q Bain used a Johnson & Johnson procedure that
10:10:45 12 Luzenac had requested in the past for the grade 66 product
10:10:50 13 certification in which all fibers greater than one, what's
10:10:55 14 that, micrometer?

10:10:57 15 A That's a micrometer.

10:11:00 16 Q Not .5 micrometers are counted. Re-analysis of
10:11:03 17 the RJ Lee data, that's the company that we were just
10:11:07 18 talking about, with this tighter restriction lowers the
10:11:09 19 result somewhat, but not enough to account for this great a
10:11:14 20 difference.

10:11:16 21 The Johnson & Johnson procedure also utilizes a
10:11:20 22 different prep procedure, in which the overall amount of the
10:11:24 23 product analyzed could be easily overestimated, falsely
10:11:29 24 lowering the asbestos content.

10:11:34 25 Do you see that?

10:11:35 1 A Yes, sir.

10:11:35 2 Q And, first of all, if Mr. Bicks is right that
10:11:39 3 there's never been any asbestos in Vermont talc, there's
10:11:43 4 never been any asbestos in their product, it can't be found
10:11:46 5 anywhere, how would you lower something that doesn't exist?

10:11:53 6 A Those statements would be inconsistent.

10:11:55 7 Q And then if the procedure Johnson & Johnson uses
10:11:58 8 falsely lowers it, is that a good thing or a bad thing?

10:12:04 9 MR. DUBIN: Objection, your Honor. This is
10:12:06 10 all just argument at this point.

10:12:08 11 THE COURT: Sustained.

10:12:10 12 Q (By Mr. Lanier) In science, is it good scientific
10:12:15 13 approach to falsely lower asbestos content?

10:12:21 14 A No.

10:12:29 15 Q Tell the jury some of the Johnson & Johnson
10:12:36 16 approach for how they would test and actually decide to call
10:12:43 17 it asbestos, how would Johnson & Johnson do it?

10:12:49 18 A They'd have a litany of tests, it's not a litany,
10:12:55 19 they basically do it by three ways. They start off with
10:12:59 20 X-ray diffraction. That's just like the X-ray diffraction
10:13:06 21 patterns in the TEM, but not on the microscale. You can do
10:13:10 22 the whole sample.

10:13:11 23 Bombarded with X-rays, the different crystalline
10:13:16 24 structures in there will cause a diffraction pattern, and
10:13:20 25 you can then determine, using standards, what weight amount

10:13:22 1 of things like tremolite, anthophyllite, other minerals,
10:13:28 2 non-asbestos minerals, but it can't tell you if it's
10:13:32 3 fibrous. And it can't tell you if it's even there to what I
10:13:36 4 would call at the trace level.

10:13:37 5 Q All right. So the first thing they do is what
10:13:40 6 kind of a test?

10:13:41 7 A It's XRD.

10:13:43 8 Q X-ray?

10:13:46 9 A XRD is X-ray diffraction.

10:13:49 10 Q Diffraction. And is that an adequate test to pick
10:14:00 11 up trace amounts?

10:14:02 12 A In this product, no.

10:14:13 13 Q Bathroom scales.

10:14:16 14 A Yes.

10:14:18 15 Q Will bathroom scales work to pick up weight?
10:14:22 16 Let's see if I can take the light off and make this work a
10:14:30 17 little better. There we go. Will bathroom scales pick up
10:14:36 18 weight?

10:14:37 19 A Sure. As long as there's enough weight to pick it
10:14:40 20 up.

10:14:40 21 Q All right. So I can lean on this and see that I
10:14:43 22 weigh 18 pounds?

10:14:45 23 A No. You would be dead.

10:14:50 24 Q But if I wanted to weigh something as small as an
10:14:53 25 asbestos needle, will a bathroom scale do that?

10:15:02 1 A No, it doesn't -- what we call the sensitivity of
10:15:05 2 the analysis. It's the analytical sensitivity. What amount
10:15:10 3 do you have to have to get a positive reading. One fiber.
10:15:14 4 How much do you have to have in there to get a positive
10:15:17 5 reading. Is it the test sensitive?

10:15:19 6 Q I mean, I can take, instead of a bathroom scales,
10:15:23 7 there are such things as jeweler scales, correct?

10:15:28 8 A Correct.

10:15:28 9 Q And we can take a jeweler's scale, and the
10:15:37 10 jeweler's scale will give us -- is it more sensitive?

10:15:43 11 A Yes, it is. You can see by looking at all the
10:15:46 12 zeros, you got 0.000. As we call it the tear amount, that's
10:15:54 13 where you start with.

10:15:55 14 Q So one needle, not a bundle, but one needle.
10:16:03 15 Let's see if I can get that to show.

10:16:10 16 A And your units are in grams, so that weighs 0.06
10:16:13 17 grams.

10:16:16 18 Q Two needles?

10:16:20 19 A Pretty good. It doubles. Good quality control on
10:16:25 20 those needles.

10:16:27 21 Q Three needles. I can weigh needles all day long,
10:16:33 22 and I can decide whether or not they are needles, fair?

10:16:36 23 A That's fair.

10:16:38 24 Q But if I want to take those four needles and do
10:16:44 25 the same thing with a bathroom scale, how much luck am I

10:16:50 1 going to have if I'm using a scale that's not sensitive

10:16:53 2 enough. Let's put that first needle on there. Will the

10:17:04 3 scale tell me if there's a needle?

10:17:06 4 A No. That's in pounds, but that would be 1 pound

10:17:14 5 equals approximately 454 grams, so you'll have to stick a

10:17:20 6 lot of needles on there to get 45 grams when they only weigh

10:17:24 7 .00 -- is it .006?

10:17:34 8 Q It went off because it doesn't register anything

10:17:37 9 being on there. I got to restart. I mean, if I'm going to

10:17:43 10 get this scale to register anything at all, put my glasses

10:17:50 11 on there. Clip. Needles. Heck, put the other scale on

10:17:58 12 there.

10:17:58 13 A No. It's not as sensitive because it's dealing

10:18:03 14 with a bathroom scale has a set mind of where humans would

10:18:10 15 start off on weight for their age group. So it's designed

10:18:14 16 for a person to set on -- stand on, excuse me.

10:18:17 17 Q So if I use the wrong scale, I have all that on

10:18:21 18 there, and I can tell everybody, hey, there are no pins of

10:18:28 19 any kind, straight pins or marking pens, there are no

10:18:32 20 glasses. There are no clips. There's nothing on there.

10:18:36 21 A Correct.

10:18:40 22 Q Now, you talked about the company's failure to use

10:18:44 23 a sensitive enough analysis on that first layer.

10:18:51 24 MR. LANIER: Your Honor, I'm going to have

10:18:53 25 pins on the ground. I promise I will try during the break,

10:18:56 1 I only took four out, to rescue all four.

10:19:00 2 Q (By Mr. Lanier) That's not the only kind of test,
10:19:02 3 though, the company did. They didn't only do one that's
10:19:06 4 like a bathroom scales, fair?

10:19:08 5 A Fair. They would -- they would do XRD, which
10:19:12 6 has -- today, good state-of-the-art ones, a really good
10:19:17 7 person who knows how to use it and make the sample. About
10:19:20 8 the best you're going to get is a 0.1 weight percent,
10:19:25 9 that's -- if you have a standard and they do it pretty well.
10:19:30 10 But typically your analytical sensitivity is in the .1 to
10:19:37 11 .5 percent range.

10:19:39 12 Q All right. I messed up because I was cleaning up
10:19:42 13 for a moment. So X-ray diffraction, how sensitive is that?
10:19:46 14 How much asbestos do you have to pick it up?

10:19:49 15 A For tremolite asbestos or just --

10:19:52 16 Q Or actinolite or anthophyllite.

10:19:55 17 A Tremolite and actinolite, it's pretty much the
10:19:57 18 same. It's in the .1 to .3 weight percent.

10:20:03 19 Q 1 percent to .3 percent of weight. All right.
10:20:08 20 And if the company gets a no on the bathroom scales, what
10:20:14 21 would the company do next?

10:20:16 22 A Typically they would stop.

10:20:19 23 MR. DUBIN: I'm going to object. That lacks
10:20:22 24 foundation.

10:20:23 25 THE COURT: Overruled.

10:20:25 1 Q (By Mr. Lanier) So, the company puts the stuff on
10:20:28 2 the bathroom scales and if it doesn't register they just say
10:20:32 3 we're done. If it does register on a bathroom scales, what
10:20:36 4 do they do?

10:20:38 5 A Then they would go to polarized light microscopy.

10:20:42 6 Q And that's polarized light microscopy. What is
10:20:49 7 that?

10:20:50 8 A PLM. It's an optical microscope. And, again,
10:20:54 9 we're dealing with crystals. So the polarized light
10:20:59 10 microscope can take light that's moving in these wavelengths
10:21:04 11 of lighting here, going in all different directions. Like
10:21:09 12 polarized sun glasses, that takes the light that's coming
10:21:12 13 straight at you and lets it in and gets all the scatter out.
10:21:17 14 That's why you can put them on, look at lights, and all of a
10:21:19 15 sudden you can start seeing the fish, because you're not
10:21:23 16 getting all that scatter.

10:21:24 17 That's how polarized light lends its work. So if
10:21:27 18 you do it here and you line the light up in one direction.
10:21:30 19 When it goes through a crystal, if you change the direction
10:21:34 20 of that light and you do it by just changing the direction
10:21:37 21 of the crystal, it will turn colors, polarized colors.

10:21:41 22 Q We saw that with Dr. Blount's -- that's what she
10:21:44 23 was doing. You've seen that as well?

10:21:46 24 A Yeah, it just changes. You line -- you line up
10:21:49 25 the -- and they're really big bundles. And if you line it

10:21:54 1 up and then you just rotate the stage and you rotate it 90
10:21:57 2 degrees. If it's a particular type of asbestos it's got to
10:22:01 3 change colors when you do that rotation.

10:22:03 4 Q Okay. And if the company does not find asbestos,
10:22:07 5 and we're going to come back to how this test was rigged in
10:22:10 6 a little bit, but if the company does not find asbestos
10:22:13 7 there, what would they do for -- would they stop then?

10:22:16 8 A According to their flow sheet of tests they would
10:22:20 9 stop.

10:22:20 10 Q Okay. And if, in fact, they find it still there,
10:22:24 11 so they found it on the scales, they found it that way.
10:22:27 12 Then what would they do to try to find a way to say no?

10:22:31 13 A Well, I'm not suggesting they're finding a way to
10:22:34 14 say no or not.

10:22:36 15 Q Fair enough. I should not ask a motive question
10:22:38 16 of you. Then what would be done to determine the answer of
10:22:42 17 whether they report it?

10:22:43 18 A Then they would use microscopy, which is the most
10:22:48 19 sensitive method. So that would be the final method.

10:22:54 20 Q And that's that big machine you've been telling us
10:22:58 21 about that you use that finds it?

10:23:00 22 A Yes, sir. We have four of those machines.

10:23:03 23 Q Now, you've got a very -- not just you, the -- a
10:23:09 24 number of different scientists over the last 40 years have
10:23:12 25 talked about a specific way to do test two and three. Is

10:23:17 1 that fair to say?

10:23:19 2 A That's fair.

10:23:20 3 Q And we can call that -- what would you call that
10:23:22 4 to the jury?

10:23:24 5 A For the polarized light microscopy test, everybody
10:23:27 6 calls it the R93 method, the draft EPA method.

10:23:34 7 Q Is it a concentration method? I'm looking for
10:23:38 8 something --

10:23:39 9 A Ah, no. The two ways to do the polarized light
10:23:43 10 microscopy method and the TEM method. One is just to look
10:23:47 11 at it just like it is, take the talc, put it on a glass
10:23:51 12 slide, that's what you analyze. Or you go through this
10:23:55 13 concentration method, you get the talc out of there so that
10:23:59 14 you literally -- you're looking for needles in a haystack at
10:24:03 15 these trace concentrations.

10:24:05 16 Get rid of the haystack, the needles are easier to
10:24:08 17 find. Otherwise, all that hay you got to dig through it,
10:24:12 18 you don't find it a lot.

10:24:14 19 Q All right. So two -- Mr. Bicks' point that the
10:24:19 20 company even uses TEM, as you do, TEM being something that's
10:24:24 21 really fine that will pick it up like the jeweler's scales.

10:24:29 22 A That is correct.

10:24:29 23 Q If what we're looking at -- if what we're looking
10:24:43 24 at is trying to find a needle in a haystack -- your Honor, I
10:24:53 25 did not bring a haystack into your courtroom, but I did get

10:24:58 1 a bale of hay if that's all right with the Court. I'm going
10:25:08 2 to sweep up at lunch.

10:25:10 3 So, if we need to find out if there is a needle or
10:25:18 4 a hundred or a thousand or a million, a needle in the
10:25:21 5 haystack. If you do it the way the company did it, where
10:25:32 6 they just take off one little piece and they put it on
10:25:37 7 there, what are the odds of you ever taking off the little
10:25:43 8 piece that's going to have the needle?

10:25:47 9 A The odds aren't good unless that particular sample
10:25:50 10 has what I would call the way higher end of the asbestos
10:25:56 11 content as compared to what we would call trace.

10:26:00 12 Q Can you find the needle in the haystack by just
10:26:05 13 taking off one little piece at the corner?

10:26:07 14 A No. You have to find -- if you don't concentrate
10:26:12 15 it you have to start doing other things like looking at it
10:26:15 16 for a really long time in the electron microscope to see
10:26:19 17 more and more in the area with the hope that getting enough
10:26:23 18 of a high analytical sensitivity, that is how much do I have
10:26:27 19 to have in there to find one fiber.

10:26:29 20 So if I measure it and I'm analyzing it, there has
10:26:33 21 to be a certain concentration in there for me to see. So
10:26:37 22 that's statistically -- I'm going to run into one. So
10:26:41 23 there's a concentration that is called your analytical
10:26:47 24 sensitivity, how much has to be in there for me to find one.

10:26:50 25 Q So you're saying for this method to work you need

10:26:56 1 to concentrate it as opposed to just blind luck, let me
10:27:01 2 check it for asbestos needles?

10:27:05 3 A For me, it's what's the most efficient way to give
10:27:10 4 me the best analytical sensitivity so that I can say, okay,
10:27:15 5 when I analyzed it, I know that at least there's not this
10:27:21 6 much there or above. Because I've got down to my best
10:27:26 7 analytical sensitivity.

10:27:27 8 If you don't do the concentration method with
10:27:30 9 talc, you run into a problem for every asbestos fiber, or
10:27:34 10 there's at least one million talc particles.

10:27:39 11 Now, when you're dealing with at all a glass slide
10:27:42 12 or TEM grid, you can't have that much talc laying in there
10:27:47 13 because it covers everything up, so we have to dilute it.
10:27:49 14 And then when we dilute it that means we got to go look at a
10:27:54 15 whole bunch of area in the TEM, that takes a long time.

10:27:58 16 Now, we can get rid of the talc, get rid of the
10:28:01 17 hay, just collect the needles if they're there, gets more
10:28:05 18 efficient and a much better analytical sensitivity.

10:28:10 19 Q I know you don't burn away the talc, you burn away
10:28:13 20 hay maybe. You're saying, to use an analogy or metaphor, if
10:28:17 21 we burned all this hay and got rid of all the ashes and then
10:28:21 22 looked at what was left to put up there to test, we got a
10:28:24 23 better shot at finding the needles?

10:28:27 24 A Yes. Say the little bit you have on the floor
10:28:30 25 there, we still see a little bit of talc when we

10:28:33 1 concentrate. We get rid of that, but we still have some on
10:28:37 2 the bottom.

10:28:38 3 Q That's the picture you showed us, the picture
10:28:41 4 that's got the talc as well as the -- on top of the asbestos
10:28:45 5 fiber?

10:28:45 6 A Yes. We don't see that too often actually on a
10:28:48 7 asbestos fiber, but you are seeing some talc. Now, if we
10:28:51 8 had used the same amount, you have to understand we start
10:28:54 9 with like a recipe, you know, a cup of sugar. We're using a
10:29:00 10 cup of sugar. If I hadn't concentrated that cup of talc
10:29:06 11 would have obliterated that sample. You wouldn't be able to
10:29:08 12 see anything. There would be so much talc stacked on top of
10:29:12 13 each other, any asbestos fibers in there would be hiding.

10:29:15 14 So we get rid of the talc as much as we can, those
10:29:18 15 asbestos fibers are getting in the bottom of the test tube,
10:29:21 16 so now we made it that we can actually find if it's there or
10:29:26 17 not. But if you use the amount we used in a TEM and didn't
10:29:30 18 do this concentration method it would just be black. You
10:29:34 19 couldn't see through it.

10:29:35 20 Q So the way that the company does it and the way
10:29:37 21 the company has it done, are you surprised that they, most
10:29:44 22 of the time, don't find asbestos fibers?

10:29:48 23 A No, I'm not surprised at all.

10:29:50 24 Q And then the few times that they do, we've got the
10:29:53 25 tilt the scales and all the rest that we were talking about;

10:29:57 1 is that right?

10:29:57 2 A Well, they have found it in TEM.

10:30:01 3 Q They have found it. Go ahead and tell the jury
10:30:04 4 what it is.

10:30:05 5 A They have found asbestos by TEM in the past in
10:30:09 6 their talc samples. They'll find two, three fibers maybe.

10:30:14 7 So the concentration, in my opinion, is higher than what

10:30:17 8 we're normally seeing in there, or they just got really

10:30:21 9 lucky this one time statistically that they ran into one,

10:30:24 10 even though their analytical sensitivity is so bad.

10:30:28 11 Q By the way, tell the jury how many Johnson &

10:30:30 12 Johnson requires them to find before they'll call it

10:30:33 13 asbestos and report it as being there.

10:30:35 14 A You have to find five asbestos fibers of one type.

10:30:40 15 So we'll go to tremolite. If you see four tremolite fibers,

10:30:47 16 you have to call it non-detective or non-quantifiable. You

10:30:51 17 have to have five.

10:30:52 18 Now, if there's tremolite and anthophyllite, it's

10:30:57 19 not six. It's five anthophyllite. So now it has to have

10:31:03 20 five tremolite, five anthophyllite. And if it has another

10:31:08 21 asbestos in there, you've got to have five of those.

10:31:10 22 So you're not just dealing with finding one fiber

10:31:13 23 and call it asbestos. You're dealing with you got to have a

10:31:17 24 bunch in there before they say it's asbestos containing.

10:31:20 25 Q So they can find four fibers just like a blind hog

1 will find an acorn, or you can find sometimes a needle in a
2 haystack, they might find four tremolite fibers, but they'll
3 report it as no asbestos because they've arbitrarily set
4 this threshold that there's not five?

5 A They say -- they set it to say that they're
6 accounting for contamination on their filters, that the
7 filters they're using will have asbestos on it, so you got
8 to take that into account so you don't skew the results
9 because it's on their filters. That it's in the background
10 air. That this is normal accounting procedures.

11 And every protocol will have some of that if you
12 look at your background samples, if you, in fact, have
13 asbestos in your cleaning filters, you have to take that
14 into account.

15 Q Well, I mean, do you have tremolite asbestos on
16 your clean filters, is that pretty common?

17 A No. It's not common at all. If asbestos starts
18 showing up on your blanks and your filters, you need to hire
19 a new lab manager, because that's unacceptable. Especially
20 tremolite, because that's not asbestos that is routine
21 through the lab or products. That's not something we see
22 ever is tremolite on our clean filters and our clean stuff
23 that we're using.

24 Q So in the process of this, when Mr. Bicks told
25 this jury that they had, quote, thoroughly tested their

10:32:51 1 asbestos and had it thoroughly tested and that they used
10:32:56 2 these three different approaches to do it, the way they did
10:33:03 3 it, is this going to help anybody at all find asbestos if
10:33:06 4 you really want to find it?

10:33:09 5 A Not for this type of product, because we're
10:33:11 6 dealing with trace concentrations. And this is not your
10:33:18 7 typical asbestos construction product that you put into a
10:33:22 8 building where it has 10 percent, 5 percent asbestos. These
10:33:26 9 materials, after they're dug out of the ground, the talc,
10:33:30 10 cosmetic talc is milled, it's ground, so you're dealing
10:33:33 11 with -- not only you're dealing with the talc in very small
10:33:38 12 sizes, you're dealing with there's big bundles in there they
10:33:41 13 may pull apart.

10:33:43 14 So this is not the type of analysis where you can
10:33:46 15 rely on just XRD or just on PLM, if you have a negative.
10:33:52 16 Certainly, if you have a positive by polarized light
10:33:54 17 microscopy, that gives you information, that will tell you,
10:33:57 18 yes, I've got asbestos here, but it's typically at a higher
10:34:00 19 concentration, at least what we're seeing.

10:34:03 20 Q All right. So you and some others have talked
10:34:05 21 about using, if you want to make it work, what you call
10:34:11 22 separating out and concentrating the asbestos?

10:34:14 23 A Correct.

10:34:15 24 Q That's the next subject I'd like to get into, your
10:34:17 25 Honor. I don't know how you time your breaks. I can keep

10:34:20 1 going right now or we can take a break.

10:34:22 2 THE COURT: Folks, you got another 15
10:34:24 3 minutes? Looks like we got a split decision here. We're
10:34:31 4 going to go ahead and take our break this morning. Let's go
10:34:34 5 to five minutes to 11. If you would be upstairs subject to
10:34:37 6 the call of the -- Doctor, you can have a seat here.

10:34:42 7 THE WITNESS: I'm sorry, your Honor. I saw
10:34:44 8 people standing, I was right in your way.

10:34:46 9 THE COURT: All right. Sheriff will be up
10:34:49 10 about five till. Thanks for your work this morning.

10:34:52 11 Remember what we talked about. Until the case is
10:34:54 12 given to you to decide, please do not discuss the case among
10:34:58 13 yourselves, with others, or permit anyone to discuss it
10:35:02 14 within your hearing.

10:35:03 15 Do not form or express any opinion about the case.
10:35:06 16 Do not communicate about the case. Do not do any research
10:35:08 17 or investigation. And please remove yourself from any
10:35:12 18 situation where information about this case comes your way.

10:35:17 19 Once again, thanks for your work. We'll see you
10:35:19 20 in about 15 minutes upstairs. You are excused.

10:36:02 21 (The following proceedings were had in open
10:36:02 22 court, outside the presence and hearing of the jury:)

10:36:03 23 THE COURT: All right. Doctor, you can step
10:36:05 24 down.

10:36:05 25 THE WITNESS: Sorry about that.

10:36:07 1 THE COURT: That's okay. That's all right.
10:36:09 2 Anything before we -- anything needs to be on the record?

10:36:13 3 MR. LANIER: Not for Plaintiff, your Honor.

10:36:15 4 THE COURT: Mr. Dubin?

10:36:16 5 MR. DUBIN: No, your Honor.

10:36:18 6 THE COURT: Court will be in temporary
10:36:20 7 recess.

10:36:20 8 (Proceedings stood in temporary recess, after
10:36:20 9 which the following proceedings were had in open court:)

11:03:18 10 THE COURT: Thank you. We'll be back in
11:03:19 11 session, please be seated. All right.

11:03:25 12 Further inquiry on behalf of the plaintiff,
11:03:27 13 Mr. Lanier.

11:03:28 14 MR. LANIER: Thank you, your Honor. May it
11:03:29 15 please the Court.

11:03:30 16 THE COURT: Yes, sir.

11:03:30 17 **DIRECT EXAMINATION CONTINUED**

11:03:31 18 BY MR. LANIER:

11:03:33 19 Q Dr. Longo, aside from these testing approaches,
11:03:39 20 right before we leave our stop on what I've called rigged
11:03:46 21 tests, I want to ask you about one more test that Mr. Bicks
11:03:52 22 talked about in opening.

11:03:53 23 Mr. Bicks' opening on page 831, where he was
11:03:58 24 describing these tests after he talked about that third one
11:04:02 25 we looked at, the TEM test. Mr. Bicks said, says: J&J

11:04:14 1 actually even went beyond that because it did audits where
11:04:19 2 it not only used these three techniques which you'll learn
11:04:23 3 about, but it even went beyond and used something called
11:04:28 4 differential thermal analysis.

11:04:32 5 Are you familiar with differential thermal
11:04:37 6 analysis?

11:04:40 7 A Yes.

11:04:41 8 Q What is differential thermal analysis?

11:04:46 9 A Simply heating a sample up and when it changes
11:04:54 10 from crystal form and melts, what have you, it can either
11:05:00 11 give off heat or take in heat.

11:05:02 12 Q I can't hear you.

11:05:02 13 A Yeah. Is it on?

11:05:03 14 Q Yes, it's on.

11:05:04 15 A It's measuring a particular piece of material like
11:05:09 16 polymer, where it melts, and when it melts --

11:05:10 17 Q Polymer's a plastic?

11:05:12 18 A Right. It's used for a lot of different tests.

11:05:14 19 Where something changes in form. It either melts or
11:05:18 20 crystallizes or melts and then solidifies again, and that
11:05:24 21 you can measure where that happens at a certain temperature.

11:05:27 22 Q How useful is that for figuring out if there's
11:05:29 23 asbestos in their talc?

11:05:31 24 A It's not very useful. It's not a technique that
11:05:34 25 is recognized by any of the agencies for how we have to test

11:05:38 1 these materials. These are the standard techniques we have
11:05:42 2 up there that are used. X-ray diffraction, polarized light
11:05:46 3 microscopy, and transmission electron microscopy. Those are
11:05:49 4 the only certified methods in this country.

11:05:54 5 We have a differential scanning calorimeter that
11:05:58 6 does the same thing, but it's not something we use for
11:06:02 7 asbestos. Somebody says what's the melting temperature of
11:06:05 8 this polymer, or this crystalline material, where does it
11:06:09 9 change form when you heat it up, and it can tell you very
11:06:13 10 precisely at what temperatures.

11:06:15 11 Q Last night you and I visited for about 30 or 45
11:06:19 12 minutes, and I was asking you about this, and you likened it
11:06:22 13 to pin the tail on the donkey?

11:06:26 14 A I didn't know you were going to use that.

11:06:28 15 Q I know you didn't it. You wouldn't have let me so
11:06:30 16 I did it without telling you.

11:06:33 17 Can you explain to us why, you said it was like
11:06:36 18 pin the tail on the donkey blindfolded. Tell us -- tell the
11:06:40 19 jury why you would use that analogy with me yesterday?

11:06:44 20 A Because you would never know if you were actually
11:06:47 21 pinning it or not, because it can't tell you exactly what
11:06:50 22 you need to know like XRD and PLM and TEM. Those are all
11:06:56 23 good methods, you just have to know its limitations and
11:07:00 24 sensitivity.

11:07:01 25 Q Now, I want to move into the concentration method

1 in a moment, but before I do, you just said something that I
2 think's very important. Are you criticizing using X-ray
3 diffraction, polarized light microscopy and transmission
4 electron microscopy, as just approaches?

5 A No. During the '70s, 60s, these were the
6 state-of-the-art measurements for analyzing for asbestos.
7 Polarized light microscopy goes back years and years and
8 years. But if you use the method where it's not sensitive
9 enough for what you're looking at, you just have to
10 understand that.

11 Polarized light microscopy is something we do in
12 our lab today. We analyze hundreds and hundreds of
13 thousands of asbestos samples by polarized light microscopy.

14 But these are construction asbestos products.
15 These are things made specifically to put into a building or
16 house. So you're usually having to deal with is it greater
17 than or less than 1 percent asbestos.

18 Polarized light microscopy do that all day long.
19 XRD, not as much, but it's very good technique for looking
20 for minerals. And you have an unknown sample and some
21 people will use it for asbestos. But we're looking for
22 asbestos products that if you want to average all the
23 construction asbestos products out, probably in the 10 to
24 15 percent range.

25 These are really good techniques for that. Not

11:08:32 1 good when you start getting below this tenth of a
11:08:36 2 weight percent. Then it starts losing its ability to really
11:08:40 3 see what's there because it has resolution issues or
11:08:43 4 analytical sensitivity.

11:08:46 5 Q Do bathroom scales work if you're weighing the
11:08:49 6 right amount of weight?

11:08:51 7 A Yes, they do.

11:08:52 8 Q Now, you say then that this doesn't work if the
11:08:55 9 sensitivity's needed. I want to move to the question of
11:08:59 10 whether or not, if this was commonly done in the '60s and
11:09:03 11 the '70s, I want to move to the issue of whether or not
11:09:08 12 anyone ever thought of doing something differently with
11:09:11 13 talc. You follow me?

11:09:13 14 A Yes.

11:09:14 15 Q In other words, would Johnson & Johnson, for
11:09:16 16 example, know better than to try to use something that works
11:09:20 17 for building products, when they're dealing with talc,
11:09:24 18 that's the issue?

11:09:26 19 MR. DUBIN: Objection, your Honor. As to
11:09:27 20 Johnson & Johnson's knowledge from this witness.

11:09:30 21 THE COURT: As to the phrasing of the
11:09:31 22 question, sustained.

11:09:34 23 MR. DUBIN: Argumentative.

11:09:36 24 Q (By Mr. Lanier) I want to look at different things
11:09:38 25 that were known in the academic community pertaining to this

11:09:41 1 issue. Fair?

11:09:43 2 A Fair.

11:09:43 3 Q And to do that, we need to talk about something
11:09:46 4 called the concentration method. You talked about how these
11:09:53 5 techniques work if it is concentrated and separated, if you
11:09:59 6 take the hay and get rid of all the hay, as much as you can,
11:10:04 7 then look for the needles, right?

11:10:06 8 A That is correct.

11:10:07 9 Q Okay. To keep this in our brain as being
11:10:12 10 different. We have an empty can, orange juice concentrate
11:10:16 11 to me is the most normal concentrate I can think of, right?

11:10:20 12 A Yes.

11:10:21 13 Q Do you know how orange juice concentrate is made
11:10:25 14 from orange juice?

11:10:27 15 A Yes.

11:10:28 16 Q Give us a clue so that we've got some place to
11:10:32 17 anchor this concept within our brain.

11:10:34 18 A Well, when you -- when you make it from the
11:10:37 19 concentrate, which you typically do, you add water so you're
11:10:41 20 removing a lot of the water which makes up a large portion
11:10:45 21 of orange juice. And then so to keep the pulp, the flavor,
11:10:50 22 there has to be some water in there so that you can freeze
11:10:53 23 it.

11:10:54 24 Now, if you're as old as me, you remember Tang. I
11:10:58 25 don't know if they still sell that, they take all of the

11:11:01 1 water out, doesn't taste as good as the concentrate. Went
11:11:06 2 to the moon.

11:11:08 3 Q That's right, Tang. It was tangy. It was bitter,
11:11:12 4 I mean, it had a sharper taste. So you get OJ, for an
11:11:17 5 example, as a concentrate. How do you concentrate or get
11:11:23 6 rid of the hay for this product?

11:11:30 7 A A simple way to -- if we look at that bale of hay
11:11:35 8 and we think about those needles in there, let's put that
11:11:39 9 bale of hay in something where the hay floats and the
11:11:42 10 needles go to the bottom. For that you could do it with
11:11:46 11 just water.

11:11:47 12 So if you were to mix that up in a big vat of
11:11:51 13 water, let it just sit there, and then at the bottom of that
11:11:55 14 vat you have a little something you could open up and take
11:11:58 15 the bottom out, there's where all your needles would be
11:12:02 16 because the needles will not float in water. The hay will.

11:12:06 17 The scientific reason for that is think of a sugar
11:12:09 18 cube, the size of a sugar cube. That sugar cube is
11:12:14 19 approximately 1 centimeter squared cubed, three sides.

11:12:20 20 The water waves has a density of 1 gram of weight
11:12:26 21 for that cubic centimeter, I believe. I hope I'm right on
11:12:29 22 that. I always miss the easy stuff.

11:12:32 23 Q We do have a taste scientist on the jury.

11:12:36 24 A I was thinking, okay, I hope I'm right on that.
11:12:38 25 So that hay, you go to squish it, unless it's got openings

11:12:44 1 in it so air can get in there. If I were to squish that
11:12:47 2 into cubic centimeters, it's going to weigh less than the
11:12:51 3 water so that's going to float, a cork. Those nails are
11:12:55 4 going to go right to the bottom so I can separate that out
11:12:59 5 by doing that.

11:13:00 6 In the talc, instead of using water, we call that
11:13:06 7 a heavy liquid. So it's got some other chemicals in it
11:13:11 8 that's made up of water so instead of weighing 1 gram per
11:13:13 9 cubic centimeter, in this case what we use weighs 2.85 grams
11:13:19 10 per cubic centimeter so it's heavy. They call it heavy
11:13:23 11 liquid.

11:13:24 12 The talc weighs 2.6 grams per cubic centimeter, so
11:13:28 13 it floats. The tremolite weighs 3.1 grams per cubic
11:13:33 14 centimeter, so it sinks. And we help that along by putting
11:13:37 15 in a centrifuge, you know, been in those -- those carnival
11:13:44 16 rides where you stand up against the wall, you spin around
11:13:48 17 and that wall drops? There's a reason you don't slide down
11:13:51 18 because the force is pushing you out.

11:13:54 19 When we use the centrifuge tube, we're using a
11:13:57 20 force to help drive what weighs more to the bottom of the
11:14:01 21 tube, and then the talc goes to the top. That's how we
11:14:04 22 concentrate, and we just take off that bottom of that test
11:14:08 23 tube to get the needles with a little bit of the hay like
11:14:11 24 you have on the floor.

11:14:12 25 Q Okay. Is this idea of concentrating by separation

11:14:17 1 something you dreamed up?

11:14:21 2 A No. If I did I would call it the Longo Separation
11:14:28 3 Method.

11:14:29 4 MR. LANIER: Your Honor, we would move into
11:14:31 5 evidence Dr. Blount's paper, Plaintiff's Exhibit 7580, the
11:14:37 6 Amphibole Content of Cosmetic and Pharmaceutical Talcs.

11:14:40 7 MR. DUBIN: No objection, your Honor.

11:14:43 8 THE COURT: Very well. 7580 will be
11:14:45 9 received.

11:14:46 10 MR. LANIER: Thank you, your Honor.

11:14:47 11 Q (By Mr. Lanier) Sir, I'll give you a copy of Dr.
11:14:49 12 Blount's paper. The jury got to meet Dr. Blount yesterday
11:14:54 13 in that deposition, the video deposition that we started out
11:14:57 14 with.

11:14:58 15 Have you ever met her individually?

11:15:00 16 A No, sir, I haven't had the honor.

11:15:02 17 Q I think she's in her 80s or something, but we got
11:15:06 18 to meet her through a deposition yesterday. She talked a
11:15:10 19 little bit about this publication that she did in 1991.

11:15:16 20 Have you read this publication?

11:15:17 21 A I have.

11:15:18 22 Q And this publication is one where she examined
11:15:27 23 pharmaceutical and cosmetic-grade talcs for asbestiform
11:15:34 24 amphibole content. In everyday language, what does that
11:15:40 25 mean?

11:15:40 1 A Asbestiform amphibole would be any of the
11:15:44 2 amphibole minerals. Here we're dealing with asbestos.

11:15:48 3 MR. DUBIN: Your Honor, I'm sorry. On the
11:15:49 4 exhibit, I didn't realize that he had put another page at
11:15:52 5 the end of the article that does not belong with the
11:15:56 6 article. I have no objection to the article, but an
11:15:58 7 additional handwritten page that I don't believe that the
11:16:03 8 foundation's been laid.

11:16:04 9 MR. LANIER: Your Honor, I specifically want
11:16:06 10 the handwritten page in. This is the way it was produced to
11:16:09 11 us by Johnson & Johnson. You'll see the Bates stamp number
11:16:12 12 at the bottom. This is Johnson & Johnson, and on the back I
11:16:14 13 produced the metadata from Johnson & Johnson, this is
11:16:18 14 original from them. Every one of these pages, including the
11:16:21 15 back page, page number 7.

11:16:24 16 MR. DUBIN: Your Honor, I don't think we
11:16:24 17 should be having an argument in front of the jury. We're
11:16:27 18 happy to approach if you'd like.

11:16:31 19 THE COURT: We touched on this last page
11:16:33 20 last. Let's take this up at the sidebar.

11:16:37 21 MR. DUBIN: Thank you.

11:16:38 22 (Counsel approached the bench, and the
11:16:38 23 following proceedings were had:)

11:19:40 24 THE COURT: Okay. So last week I had asked
11:19:41 25 who wrote this. And was anyone ever identified who wrote

11:19:42 1 this?

11:19:42 2 MR. LANIER: Yes, your Honor. We now can
11:19:43 3 identify it as being Johnson & Johnson's, we don't know who
11:19:44 4 within Johnson & Johnson, but it was produced to us by them.
11:19:45 5 It's attached in their files to their copy of Alice Blount's
11:19:47 6 memo. And so the Bates stamp numbers in the corner are the
11:19:48 7 Johnson & Johnson produced to us, so that we were produced
11:19:49 8 this entire document. And we've provided also for the Court
11:19:51 9 the metadata, which shows the custodian file that it was in
11:19:52 10 at Johnson & Johnson.

11:19:52 11 The date Johnson & Johnson set it up, which
11:19:53 12 they've got at 1991. That it was produced to us in a TIFF
11:19:54 13 form. It's got the Bates numbers attached and the file size
11:19:56 14 as part of the production. So this is just the way Johnson
11:19:57 15 & Johnson kept her article over the years.

11:19:58 16 MR. DUBIN: The fact that something's in your
11:19:59 17 files does not mean it's your document. It could have been
11:20:00 18 provided by any person. In order to lay a business records
11:20:02 19 foundation he has to do more than just establish it's in her
11:20:03 20 files.

11:20:03 21 For example, there's been testimony about people,
11:20:04 22 lawyers who have been involved in litigation with these
11:20:05 23 things, information that could have been provided by
11:20:06 24 anybody. Doesn't make it a business record just -- or an
11:20:07 25 admission to have an unauthenticated handwritten note in

11:20:09 1 your files.

11:20:09 2 MR. LANIER: With due respect, your Honor,
11:20:10 3 the way it was produced to us shows the date it was modified
11:20:11 4 as 1991. This is before any lawyers or anyone got involved
11:20:13 5 in this case. This clearly is part of their regular course
11:20:14 6 of business because that's what they produced it to us as.
11:20:15 7 Part of their regular course of business. This is one
11:20:16 8 reason that I think --

11:20:17 9 THE COURT: All right. So for what purpose
11:20:18 10 is this page?

11:20:18 11 MR. DUBIN: It was handwritten notation,
11:20:19 12 appears to be in different handwriting. Because like this,
11:20:20 13 and then the dash.

11:20:21 14 THE COURT: Okay. What I was asking, for
11:20:21 15 what purpose is this 07580 will be used with this witness?

11:20:23 16 MR. LANIER: To explain what the
11:20:24 17 concentration method is and that it's been used before, and
11:20:25 18 it was used in this test by Dr. Blount.

11:20:26 19 THE COURT: I'm going to overrule the
11:20:27 20 objection.

11:20:27 21 MR. DUBIN: Sorry?

11:20:28 22 THE COURT: Overrule the objection.

11:20:28 23 (The proceedings returned to open court.)

11:20:29 24 MR. LANIER: Thank you, your Honor. May I
11:20:29 25 continue?

11:20:29 1 THE COURT: Yes, sir.

11:20:30 2 Q (By Mr. Lanier) All right. Pharmaceutical and
11:20:30 3 cosmetic grade talcs were examined for asbestiform amphibole
11:20:32 4 content. Now, again, amphiboles -- asbestiform amphiboles,
11:20:33 5 that's the bad stuff; is that right?

11:20:34 6 A Asbestos amphiboles would be one of the regulated
11:20:35 7 asbestos fibers, bundles, fibers that we're dealing with
11:20:36 8 here. So tremolite, anthophyllite, are typically some form
11:20:37 9 of what we call the tremolite symmetry series. There's a
11:20:39 10 little bit of the change in the elements on the fiber
11:20:40 11 itself.

11:20:40 12 Q Okay. Using a new density-optical method, talc
11:20:44 13 under the FDA are not regulated as to asbestos content,
11:20:48 14 however, all talcs are well below the level mandated by the
11:20:52 15 Occupational Safety and Health Administration for industrial
11:20:55 16 talcs. Only one was found to contain an amphibole particle
11:21:00 17 size distribution typical of asbestos. Right?

11:21:06 18 A That's what it states.

11:21:07 19 Q Now, the technique that she's got, this new
11:21:12 20 density-optical method. Can you describe to the jury
11:21:19 21 generally what she did?

11:21:22 22 A Well, she concentrated the needles. In this case
11:21:28 23 the asbestos, if present at the bottom of the test tube,
11:21:32 24 using this heavy liquid that we talked about, and got the
11:21:36 25 talc out of the way. Then she used a polarized light

11:21:41 1 microscope to look at what she concentrated, that's what
11:21:44 2 sort of make it new. It's heavy density liquid separation
11:21:48 3 of minerals like this, not just for asbestos, it's been done
11:21:52 4 for years.

11:21:52 5 If you get -- it's done in mining operations where
11:21:56 6 you use floatation, have stuff that will attach bubbles to
11:22:01 7 one type of mineral and separate it out. It's more
11:22:03 8 efficient, so it's a technique that's been around for a
11:22:06 9 while, but she kind of used it specifically for talc and
11:22:11 10 optical microscopy.

11:22:12 11 Q Did the FDA, at some point in time, to the best of
11:22:15 12 your knowledge, actually consider the idea of using
11:22:20 13 separation and isolation?

11:22:23 14 A Yes.

11:22:24 15 MR. LANIER: Your Honor, at this point we'd
11:22:25 16 move into evidence Plaintiffs' Exhibit 6824.

11:22:30 17 MR. DUBIN: No objection, your Honor.

11:22:31 18 THE COURT: Very well. Plaintiffs' 6824 will
11:22:34 19 be received. Thank you.

11:22:36 20 MR. LANIER: Uh-huh.

11:22:37 21 Q (By Mr. Lanier) I'd like to show this to the jury
11:22:41 22 and get your discussion about it. First of all, do you have
11:22:44 23 Plaintiffs' Exhibit 6824 in front of you?

11:22:49 24 A Yes, sir.

11:22:51 25 Q And are you able to see on Plaintiffs' 6824, that

11:22:55 1 we're dealing with a document that is Johnson & Johnson?

11:22:59 2 A Yes, sir.

11:22:59 3 Q And we're going back now into the 1960s, 25 years
11:23:06 4 before Dr. Blount did her test and wrote it up; is that
11:23:11 5 right?

11:23:12 6 A That is correct.

11:23:15 7 Q No, it's 15 years. That was a test.

11:23:19 8 A See there.

11:23:20 9 Q Yeah, it's 15 years. My mistake.

11:23:23 10 A My mistake for agreeing with you.

11:23:25 11 Q It's true. All right. Fifteen years before Dr.

11:23:28 12 Blount we've got this, Johnson & Johnson. And it's written
11:23:32 13 by Mr. Ashton. You've seen his name in reference to a lot
11:23:35 14 of these talc/asbestos issues, fair?

11:23:38 15 A That's fair.

11:23:39 16 Q Written to George Lee, Johnson & Johnson Baby
11:23:44 17 Products Company. Attached is a copy of a disturbing
11:23:49 18 proposal. Do you see where I'm reading?

11:23:53 19 A Yes, sir.

11:23:53 20 Q A disturbing proposal request, which the FDA has
11:23:57 21 currently made available to qualified bidders. The scope of
11:24:02 22 the work is the separation of asbestos in foods, drugs and
11:24:09 23 talc for identification and determination. Do you see that?

11:24:13 24 A Yes, sir.

11:24:14 25 Q As a practical matter, if there is no asbestos and

11:24:17 1 never has been asbestos in the history of humanity in talc,
11:24:20 2 why would they be trying to separate it for identification
11:24:25 3 and determination?

11:24:27 4 MR. DUBIN: Objection. Argument.

11:24:28 5 THE COURT: Sustained.

11:24:29 6 Q (By Mr. Lanier) I find this proposal more
11:24:32 7 disturbing than other proposals up to now because it aims at
11:24:37 8 separation and isolation of asbestos from a wide scope of
11:24:42 9 products and animal tissues.

11:24:49 10 A That's what it states.

11:24:51 11 Q Now, did you do a separation and isolation test
11:24:56 12 yourself?

11:24:56 13 A Yes, sir.

11:24:57 14 Q Is that what this concentration method is?

11:24:59 15 A It is.

11:25:00 16 Q And so in 1976, Johnson & Johnson continues to
11:25:04 17 say, up to now, our main problems have had to do with
11:25:11 18 identification, where's -- now it looks like the FDA is
11:25:15 19 getting into separation and isolation methodology, which
11:25:22 20 will mean concentration procedures.

11:25:28 21 Again, something you did, right?

11:25:31 22 A Yes, sir.

11:25:32 23 Q Being written up as something Johnson & Johnson is
11:25:35 24 aware of in 1976?

11:25:38 25 A That's how I interpret this document.

11:25:42 1 Q The Johnson & Johnson man continues: As I have
11:25:45 2 pointed out many times, there are many talcs on all markets
11:25:53 3 which will be hard pressed in supporting purity claims.
11:26:00 4 When ultrasophisticated assay separation and isolation
11:26:07 5 techniques are applied. Do you see that?

11:26:10 6 A Yes, sir, I do.

11:26:12 7 Q What does this mean, ultrasophisticated assay
11:26:17 8 separation? I don't know what assay is.

11:26:19 9 A Assay is a scientific term. It's a particular
11:26:22 10 type of test. An assay of six reagents, three of them
11:26:27 11 worked, three of them didn't sort of thing.

11:26:30 12 Q So this gentleman says there are many talcs on all
11:26:35 13 markets which will be hard pressed in supporting claims that
11:26:39 14 they're pure when this ultrasophisticated assay separation
11:26:45 15 and isolation techniques are applied. Are those the
11:26:49 16 techniques that you used?

11:26:51 17 A We did an isolation concentration method that we
11:26:56 18 discussed, yes.

11:26:57 19 Q Chances are that this FDA proposal will open up
11:27:00 20 new problem areas with asbestos and talc minerals. Do you
11:27:06 21 see that?

11:27:07 22 A Yes, sir, I do.

11:27:10 23 Q He talks about how he's going to keep tuned in.
11:27:13 24 Now, sir, within the context of this entire document, if
11:27:18 25 Johnson & Johnson was aware in 1976 of these procedures, do

11:27:25 1 you believe the equipment existed to do this work?

11:27:29 2 A Yes.

11:27:33 3 Q If someone really wanted to test their asbestos,
11:27:37 4 just -- their talc to see if it had asbestos in it, the
11:27:42 5 techniques that you're talking about, this sensitivity, did
11:27:48 6 it exist in the knowledge of Johnson & Johnson, according to
11:27:53 7 Exhibit 6824, back in 1976?

11:27:59 8 A I'm just looking at something real quick, I can
11:28:01 9 probably give you an example. Yes. The heavy density
11:28:19 10 liquid separation goes back years. It's common. Other
11:28:25 11 folks have done it earlier than this in 1990. So it's a
11:28:30 12 common technique to separate minerals that have different
11:28:34 13 densities, meaning some float better than others, as soon as
11:28:38 14 you figure that out you can then change that so you get the
11:28:41 15 ones that sink, that you want to collect, or you can collect
11:28:45 16 them off the top if they float, either way.

11:28:48 17 Q Okay. Now, in this regard, Mr. Bicks told this
11:28:53 18 jury in his opening, he said that Johnson & Johnson's talc
11:29:00 19 is tested at every step. Do you see that?

11:29:06 20 A Yes, sir.

11:29:09 21 Q Selecting a mine, mining, processing at the mill,
11:29:12 22 washing and floating. Within the framework of that, each
11:29:19 23 step needs the right test, fair?

11:29:22 24 A That's fair.

11:29:25 25 Q Now, consider this, please. Not 1976, but let's

11:29:32 1 go back in time to 1973.

11:29:38 2 MR. LANIER: Your Honor, I'll move into
11:29:39 3 evidence Plaintiffs' Exhibit 51.

11:29:52 4 MR. DUBIN: No objection, your Honor.

11:29:53 5 THE COURT: All right. Plaintiffs' 51 will
11:29:55 6 be received.

11:30:03 7 Q (By Mr. Lanier) Now, if we look at Plaintiffs'
11:30:04 8 Exhibit Number 51. Here are some proposed specifications
11:30:11 9 for analyzing talc for asbestos. Do you see that?

11:30:15 10 A Yes.

11:30:16 11 Q And we've got this on Johnson & Johnson
11:30:18 12 letterhead. Now we're back in 1973.

11:30:24 13 A Yes.

11:30:24 14 Q So we're now 18 years before?

11:30:35 15 A You are correct.

11:30:36 16 Q All right. Before Dr. Blount. And Mr. Shelley
11:30:41 17 within Johnson & Johnson -- and this is big Johnson &
11:30:45 18 Johnson -- oops. Says to a Dr. Rolle at Johnson & Johnson,
11:30:53 19 I'm going to England May 25. I have been asked to bring
11:30:57 20 along our proposed specs for analyzing talc for asbestos.
11:31:02 21 England is considering method of pre-concentrating the
11:31:07 22 asbestos so as to be able to analyze it by X-ray. Do you
11:31:13 23 see that?

11:31:14 24 A Yes.

11:31:15 25 Q Is that exactly what Alice Blount did 18 years

11:31:23 1 later?

11:31:25 2 A Sort of. She pre-concentrated it, but instead of
11:31:29 3 using X-ray or XRD, she used polarized light microscopy.

11:31:35 4 Q All right. So Dr. Blount did it with polarized
11:31:38 5 light microscopy. Same technique?

11:31:43 6 A Yes, sir.

11:31:45 7 Q They find no asbestos by doing this with Italian
11:31:51 8 talc. They find Pooley, .05 percent of a tremolite type in
11:32:01 9 Vermont. Do you see that?

11:32:03 10 A Yes, sir.

11:32:04 11 Q Now, this is where Mr. Bicks told the jury that
11:32:09 12 Dr. Pooley said there was no asbestos in Vermont talc. They
11:32:19 13 used Dr. Pooley in 1972 to tell the jury, as opposed to this
11:32:24 14 1973 document where the same fella said, according to
11:32:30 15 Johnson & Johnson, they find tremolite type asbestos in
11:32:33 16 Vermont. Do you see that?

11:32:36 17 A I would say that's what that means. They say
11:32:38 18 they'd find no asbestos in the Italian talc, and then the
11:32:42 19 tremolite type in the Vermont, 0.05 percent, which by XRD
11:32:49 20 you would have to concentrate the sample because XRD does
11:32:53 21 not have that analytical sensitivity to get to .05 percent
11:32:59 22 for tremolite. So that's below the resolution of the
11:33:04 23 system, or the method. Especially in 1972.

11:33:07 24 Q All right. And then in the same year of 1973, I
11:33:10 25 want --

11:33:12 1 A '73, I'm sorry.

11:33:13 2 Q I want to go back one more month now and look at
11:33:16 3 what the company was thinking or writing up in April of '73.

11:33:20 4 MR. LANIER: So, your Honor, I move into
11:33:21 5 evidence Plaintiffs' Exhibit Number 40, at this point in
11:33:26 6 time.

11:33:32 7 MR. DUBIN: No objection, your Honor.

11:33:33 8 THE COURT: Plaintiffs' 40 will be received.

11:33:35 9 MR. LANIER: Thank you, Judge.

11:33:40 10 Q (By Mr. Lanier) Again, still talking about the
11:33:42 11 concentration method. Okay.

11:33:46 12 A Yes, sir.

11:33:48 13 Q Johnson & Johnson Baby Products, April 1973. This
11:33:56 14 is talking about Windsor Minerals and talc. Can you confirm
11:34:02 15 Windsor Minerals is Vermont talc that was used in the baby
11:34:05 16 powder?

11:34:07 17 A It is.

11:34:08 18 Q Bill Ashton and I -- Bill Ashton was the one who
11:34:12 19 wrote that earlier document we looked at, I believe?

11:34:17 20 A Yes, sir.

11:34:18 21 Q All right. Bill Ashton and I visited with Roger
11:34:23 22 Miller and Vernon Zeitz on April 18th. We covered a number
11:34:30 23 of points of considerable concern. Do you see that?

11:34:34 24 A Yes, sir.

11:34:36 25 Q It is our joint conclusion we should not rely on

11:34:42 1 the "clean mine" approach. As a protective device for baby
11:34:48 2 powder in the current asbestos or asbestiform controversy.
11:34:55 3 We believe this mine to be very clean, however -- do you see
11:35:01 4 the however?

11:35:01 5 A Yes, sir.

11:35:02 6 Q We are also confident that fiber forming or fiber
11:35:08 7 type materials could be found. The usefulness of the "clean
11:35:14 8 mine" approach for asbestos only is over. Do you see that?

11:35:22 9 A Yes, sir.

11:35:23 10 Q Now, Mr. Bicks tried to clean mine approach to
11:35:26 11 this jury. He tried to say that they select clean mines --

11:35:33 12 MR. DUBIN: Objection. This is all just
11:35:36 13 argument. He can ask questions without arguing.

11:35:40 14 THE COURT: Overruled.

11:35:41 15 Q (By Mr. Lanier) That they selected clean mines
11:35:43 16 that they tested every hour, hundreds of thousands of tests,
11:35:47 17 or over a hundred thousand, on this mining process, trying
11:35:52 18 to say that there's never been any asbestos found in any
11:35:58 19 mine in Vermont. Do you remember that?

11:36:00 20 A I do.

11:36:02 21 Q The company, in 1973, when they're writing this
11:36:06 22 idea of the "clean mine" approach for asbestos only is over,
11:36:13 23 would you agree with the company?

11:36:16 24 A I can't -- I can't know what the company is
11:36:20 25 thinking here, but I've seen the documents and analysis, and

asbestos has been found in the Vermont mines.

Q Once, twice?

A I don't know how many times, but it's been found through the years.

Q We've already got Pooley finding it with a concentration method?

A Yes, sir.

Q That we looked at, right? It is possible that the technique of identification for asbestos or asbestos form materials will be an optical approach. It will probably be some variation of the McCrone method. This method, with appropriate concentrating techniques, will permit a good laboratory to identify asbestos or tremolite in a talc sample?

A Yes, sir.

Q This is the exact method that Alice Blount would use, what, 17 years later, 18 years later?

A Yes, sir. That's basically what she did. She concentrated it. When they say optical method, they're really saying polarized light microscopy, which is a good method. So they're saying this is what could be done for a good lab to find asbestos.

Q They're saying if they use polarized light microscopy with concentration and separation, that a good lab will be able to identify asbestos or tremolite in a talc

11:37:52 1 sample?

11:37:53 2 A That's what it states.

11:37:55 3 Q Do you have a good lab?

11:37:58 4 A I would hope so, yes, I believe we have a good
11:38:01 5 lab.

11:38:02 6 Q Did you use appropriate concentrating techniques?

11:38:05 7 A Yes, sir, we did.

11:38:06 8 Q Were you able to identify asbestos and tremolite
11:38:11 9 asbestos in a talc sample?

11:38:13 10 A Yes, sir.

11:38:13 11 Q In a talc sample of Johnson & Johnson, even after
11:38:18 12 all of this and the final bottling product?

11:38:23 13 A Yes.

11:38:26 14 Q If you continue to look through this document,
11:38:28 15 you'll see on the second page something I want to draw
11:38:33 16 attention to real quick.

11:38:36 17 It's talking about baby powder under point B. Do
11:38:41 18 you see that?

11:38:42 19 A Yes.

11:38:44 20 Q As for baby powder. The entire thrust of our
11:38:50 21 communications with the FDA has concentrated on asbestos as
11:38:55 22 a harmful fiber-like material. Sophisticated techniques
11:39:02 23 have been proposed to make sure that fiber form materials
11:39:05 24 present in samples were identified as being asbestos.

11:39:10 25 The implication is that all other fiber forms, if

11:39:13 1 present, were talc or other minerals and these were safe.

11:39:19 2 This posture will no longer be satisfactory. Do you see
11:39:25 3 that?

11:39:25 4 A Yes, sir, I do.

11:39:26 5 Q If the FDA food division, that's the food
11:39:30 6 division --

11:39:32 7 A Yes.

11:39:32 8 Q Not the baby powder division, or the cosmetic
11:39:36 9 division, which is moving more rapidly than the cosmetic
11:39:42 10 division, publishes a standard, if they do, it will probably
11:39:47 11 be to ban asbestos form or fibrous material in talc.

11:39:52 12 Now, sir, I pose this question for a moment. If
11:39:56 13 there's no asbestos in talc and there's never been any
11:39:59 14 asbestos in talc, why would banning asbestos in talc make a
11:40:02 15 difference?

11:40:03 16 MR. DUBIN: Your Honor, again, objection.
11:40:04 17 It's an argumentative question.

11:40:06 18 THE COURT: Overruled.

11:40:09 19 A It wouldn't make any sense if you didn't have
11:40:12 20 anything there, any asbestos present, then why are you
11:40:16 21 worried about somebody saying you can't have any in there.

11:40:20 22 Q (By Mr. Lanier) That could eliminate the current
11:40:22 23 uses of talc in packaging materials. These talcs contain
11:40:28 24 widely varying amounts of tremolite or fibrous talc. Our
11:40:34 25 baby powder contains talc fragments classifiable as fiber.

11:40:43 1 Did you see asbestos fibers in there?

11:40:46 2 A Yes.

11:40:47 3 Q Occasionally, sub-trace quantities of tremolite or
11:40:51 4 actinolite are identifiable, optical microscope, and these
11:40:56 5 might be classified as asbestos fiber. I mean, are fibrous
11:41:02 6 actinolite and tremolite asbestos fibers?

11:41:05 7 A They are.

11:41:07 8 Q So when Mr. Bicks tells the jury no one's ever
11:41:10 9 found any in any baby powder, any Vermont, only the
11:41:13 10 plaintiffs' experts, sir, were your findings any different
11:41:18 11 than what Johnson & Johnson had found and written up way
11:41:21 12 back in April of 1973?

11:41:26 13 A No. For the samples that we found were positive
11:41:30 14 for asbestos, we found it. It's there.

11:41:43 15 Q All right. There's one more aspect of the -- one
11:41:48 16 more stop on Rigged Test Road that I want to cover with you,
11:41:53 17 and I know we've covered a lot. But I want to talk a little
11:41:56 18 bit for just a few moments about the TEM work that is done
11:42:03 19 by the company. Okay?

11:42:05 20 A Yes, sir.

11:42:06 21 Q So the company does -- if they find no asbestos in
11:42:10 22 X-ray, they just quit, according to the flowchart?

11:42:14 23 A According to the flowchart.

11:42:17 24 Q And maybe they do it differently at times, I don't
11:42:19 25 want to get into that with you. If they can, super if they

11:42:23 1 do.

11:42:26 2 Polarized light microscopy. If they continue past
11:42:31 3 there and they actually get to trying to find the needle by
11:42:35 4 using the small scales, the TEM, are you with me?

11:42:39 5 A Yes, I am.

11:42:40 6 Q Do they even do that thoroughly?

11:42:45 7 A They run the technique that a lot of folks would
11:42:48 8 run. Except their analytical sensitivity is not, is not
11:42:55 9 very good. It allows them to really understand if they have
11:42:59 10 these trace amounts or not. Because they're not using a
11:43:03 11 concentration method, or if you don't use a concentration
11:43:07 12 method, scientists before this technique, before the
11:43:12 13 concentration technique and TEM, they were just looking at a
11:43:16 14 whole bunch more air, the grid openings, you'll hear over
11:43:20 15 and over here today that big transmission electron
11:43:24 16 microscope, the biggest sample we can put in there fits on a
11:43:28 17 33 millimeter circle, we call it a grid.

11:43:32 18 I think we have some pictures of it somewhere that
11:43:34 19 might be helpful. And what it looks like is a very
11:43:38 20 sophisticated small screen, and the grid openings are the
11:43:42 21 holes in this small screen. So, normally an analysis where
11:43:48 22 it's an asbestos product and you're measuring, you may look
11:43:52 23 at 20 to 40 grid openings.

11:43:55 24 If you don't use the concentration method, you get
11:43:58 25 the analytical sensitivity, instead of looking at 20 or 40

11:44:03 1 or 10 grid openings, you need to look up to a thousand grid
11:44:07 2 openings. And that takes a long time.

11:44:10 3 Q Ms. Cooper has handed me a note. She's right.
11:44:15 4 Just to be clear, both to the jury, the judge and the
11:44:17 5 record.

11:44:18 6 These are tests that we're talking about that
11:44:20 7 they're doing on the powder for the babies; is that right?

11:44:24 8 A Yes.

11:44:24 9 Q Or the adults that might want to use Johnson &
11:44:27 10 Johnson Baby Powder, correct?

11:44:28 11 A That's correct. Or they -- out of the mine before
11:44:30 12 it goes to the container.

11:44:32 13 Q All right. Now, have you -- this whole area is
11:44:36 14 one that needs some explanation, and so we're going to run
11:44:42 15 out of room. We're going to go to a clean sheet for a
11:44:45 16 moment because I want to make sure that we understand this.

11:44:48 17 What does it mean to talk about sensitivity,
11:44:52 18 especially when we're talking about grid openings?

11:45:00 19 A Analytical sensitivity is what is the
11:45:04 20 concentration of asbestos fibers that needs to be in the
11:45:07 21 talc. And, say, we're looking at Johnson & Johnson Baby
11:45:10 22 Powder. You take a small sample out of that container. How
11:45:16 23 much asbestos fibers or bundles has to be in there for me to
11:45:21 24 actually find one fiber or bundle of asbestos, because I'm
11:45:27 25 taking a small sample out of the container, so it's got to

11:45:30 1 have a certain concentration before I can detect, it's
11:45:34 2 called analytical sensitivity.

11:45:37 3 No chemist that's worth his salt can ever say
11:45:43 4 there's nothing there. I looked in the water for lead and
11:45:46 5 we didn't find any so I can now certify that this water is
11:45:50 6 lead-free. Can't say that in the scientific communities.
11:45:54 7 What you can say is my analytical sensitivity was one
11:45:59 8 microgram of lead per liter of water. I didn't find
11:46:04 9 anything.

11:46:05 10 All I can say is I can't say it's not there, I
11:46:07 11 can't say it's there. All I can say is if it's there, it
11:46:13 12 has to be less than one microgram of lead per gallon of
11:46:19 13 water. That's the analytical sensitivity. How much has to
11:46:23 14 be there before you get a positive test. Does that make
11:46:26 15 sense?

11:46:27 16 Q Yeah, I think it does. Let me just use it with
11:46:30 17 scales. So if this scale, bathroom scale is good to .0.0
11:46:37 18 pounds, so it will do maybe a tenth of a --

11:46:42 19 A Tenth of a pound, it should. That would probably
11:46:45 20 be pushing it, just because that extra zero's there doesn't
11:46:50 21 mean it will go to a tenth of a pound.

11:46:52 22 Q So we've got some measure of sensitivity which
11:46:56 23 will tell us if something's on here if it weighs enough,
11:47:02 24 right?

11:47:02 25 A Right.

11:47:03 1 Q Okay. Now the other scale that we use, the
11:47:08 2 jeweler's scale, even itself has some measure of
11:47:14 3 sensitivity, doesn't it?

11:47:15 4 A Yes.

11:47:19 5 Q That did not help?

11:47:20 6 A No, it did not.

11:47:23 7 Q Okay. It's still got some measure of sensitivity,
11:47:29 8 let's forget that. There we go.

11:47:37 9 A So it has three centimeter figures it looks like,
11:47:43 10 so it should be sensitive down to tenths, hundredths,
11:47:47 11 maybe -- hundreds to thousandths of a gram.

11:47:51 12 Q Yeah. I put a little thing on it, but it --

11:47:54 13 A 0.11 grams. So that's, you know, that's 11
11:47:58 14 milligrams.

11:47:59 15 Q That doesn't mean that it's -- it will weigh
11:48:03 16 everything, does it?

11:48:04 17 A No, sir. It's, at some point even that scale
11:48:07 18 cannot weigh everything. It will just show the zero because
11:48:15 19 it's past -- the weight of it is below the sampling of
11:48:18 20 sensitivity.

11:48:19 21 Q So we take this scale -- let's zero it out. Open
11:48:23 22 it up. All right. It shows zero. Can you sort of make out
11:48:32 23 that zero, or is it too hard to see?

11:48:35 24 A 0.000.

11:48:37 25 Q All right. We did it with a pin, but what we

11:48:42 1 didn't do with -- this has been sticking up anyway -- hair.

11:48:46 2 So we can take just one small little hair, didn't detect

11:48:55 3 that, did it?

11:48:56 4 A No.

11:48:56 5 Q Now, that doesn't mean there's not hair on there,
11:48:59 6 does it?

11:49:01 7 A No, of course not.

11:49:01 8 Q Explain to us what it means.

11:49:03 9 A It means that hair weighs less than the analytical
11:49:07 10 sensitivity of that scale. So now you have to get into
11:49:12 11 another generation of scales, and we even have it at our
11:49:16 12 labs that will weigh micrograms, and it's in a container you
11:49:18 13 can't have vibration, you can't have air getting on it.

11:49:23 14 We have tables that these things set on that even
11:49:26 15 with these specially designed tables, you can jump up and
11:49:30 16 down and you can watch that scale move because it will
11:49:33 17 measure that vibration come through. If you really want to
11:49:37 18 make one of the lab techs mad you do that on the other side
11:49:40 19 of the rule. Now, we have a rule against that because
11:49:43 20 sometimes these samples are irreplaceable.

11:49:46 21 Q Now, have you done a check to see how sensitive
11:49:49 22 the work that is done by the company is even under their
11:49:57 23 transmission electron microscope?

11:49:58 24 A I have.

11:49:59 25 Q And have you done those calculations in such a way

11:50:02 1 that we're able to talk about them to the jury?

11:50:06 2 A I believe so, yes, sir.

11:50:09 3 Q So some of this pertains to grid openings. Let's
11:50:14 4 get to the grid openings real quick. Explain to the jury
11:50:19 5 again what a grid is, and let's -- you said I need to put a
11:50:25 6 picture up.

11:50:26 7 MR. LANIER: Your Honor, for demonstrative
11:50:27 8 purposes, I would offer Plaintiffs' Exhibit Number 8215.

11:50:36 9 MR. DUBIN: No objection to the use as
11:50:38 10 demonstrative.

11:50:39 11 THE COURT: Very well. Will be received for
11:50:42 12 that purpose.

11:50:44 13 MR. LANIER: Thank you, Judge.

11:50:45 14 Q (By Mr. Lanier) Okay. Tell the jury what we're
11:50:47 15 looking at here at 8215.

11:50:53 16 A This is a high -- not high magnification, but this
11:51:00 17 is an increased magnification photograph of a typical TEM,
11:51:06 18 transmission electron microscopy, grid. This is what the
11:51:08 19 sample has to go on given that big microscope. And our
11:51:12 20 optical microscope we use here to calibrate it, we can
11:51:18 21 measure distances. So the distance from one end of that
11:51:21 22 grid to the other is just 3 millimeters in size. So about
11:51:25 23 yea big.

11:51:26 24 Now, you can see how these nice squares on there
11:51:29 25 and then we have numbers going on -- going, you know, up and

11:51:34 1 down from one to 10 and then A, B, C to J. So when we do an
11:51:41 2 analysis and we find an asbestos fiber, the analyst can go,
11:51:45 3 well, it's in grid number A4. So we can always keep track
11:51:50 4 of where it is. So when we do an analysis, we prepare the
11:51:58 5 sample to go on that grid.

11:52:01 6 Now, collect the TEM samples, all TEM samples are
11:52:06 7 collected. They come in different forms. You get an air
11:52:09 8 sample collected on a filter. You get a water sample
11:52:12 9 collected on a filter. Get a tissue sample, you eventually
11:52:16 10 collect it on a filter. So they all can be different, but
11:52:20 11 to get on this filter, then it's all the same after that,
11:52:24 12 and you analyze it.

11:52:25 13 You can't put that filter on the grid. It's too
11:52:28 14 thick. Electrons can't get through it. So there's a trick
11:52:32 15 to it. It's an actual analysis. Think of putting down a
11:52:37 16 very thin layer of carbon on top of that filter like Saran
11:52:42 17 wrap, but that Saran wrap down, and then you dissolve that
11:52:48 18 filter out from behind it, and that carbon Saran wrap holds
11:52:52 19 all those fibers in there. That way we can have it all on a
11:52:56 20 grid, and it's a very thin sample held together by 100 atoms
11:53:00 21 of carbon stacked up. That's how we get it on there. Did
11:53:06 22 that make sense?

11:53:08 23 Q Sort of. It does make sense, thank you. You're
11:53:11 24 looking for asbestos fibers in this fancy electron
11:53:20 25 microscope. You've got 10 grid openings going up and 10

11:53:24 1 going down, so that's 10 times 10, you've got a 100?

11:53:30 2 A Per grid opening.

11:53:32 3 Q For every grid openings.

11:53:34 4 A For every grid you have 100 openings.

11:53:35 5 Q Got it. 100 openings for every grid. Do you look
11:53:38 6 at them all?

11:53:39 7 A Yes, but not on one grid. We split it up between
11:53:43 8 two grids. So we look at 100 openings for our analysis when
11:53:47 9 we do this. So we pick 50 on one and 50 on the second grid.
11:53:53 10 That gives us -- that gives us 100 openings.

11:53:59 11 Q So 100 openings, 50 per grid.

11:54:03 12 A Approximately, yes, sir.

11:54:08 13 Q Oh. How about the experts that you've looked at
11:54:14 14 that were doing this work for Johnson & Johnson. Would they
11:54:18 15 look at 100 openings each time?

11:54:21 16 A No.

11:54:23 17 Q Tell the jury how many they would look at.

11:54:26 18 A Depending who was doing it. Anywhere from 10 to
11:54:29 19 20 openings. And the highest I've seen is 35 openings
11:54:35 20 without the concentration method.

11:54:39 21 Q So this is even -- you look at 50, you look at 100
11:54:43 22 openings?

11:54:44 23 A Yes, sir.

11:54:46 24 Q With already having concentrated it, taken out all
11:54:51 25 of the chad?

11:54:54 1 A The talc. The talc plates. We try to remove as
11:54:57 2 much of the talc plates that are in the sample as we can, so
11:55:02 3 that we're not -- because in TEM -- say this is a talc
11:55:10 4 plate. If I have it in there in my TEM I can pretty much
11:55:15 5 see through it, it's very thin. But if I start getting more
11:55:18 6 and more of those talc plates in there, all of a sudden I
11:55:24 7 can't see my fiber, and those openings are completely
11:55:28 8 covered up with talc plate, plate after talc plate, so you
11:55:31 9 have to dilute the samples a lot.

11:55:34 10 And I've used this before. Say you're looking for
11:55:39 11 the meatballs in spaghetti. You don't have any meatballs in
11:55:44 12 there and you got a big pile of spaghetti.

11:55:48 13 Q It's a little close to lunch to be using this
11:55:50 14 analogy.

11:55:51 15 A That's why I'm doing it because I'm hungry.

11:55:54 16 Q All right. Keep going.

11:55:54 17 A How many meatballs are in there? You can't touch
11:55:57 18 that spaghetti, or you can't tell. Now you can do one of
11:56:00 19 two things. You can concentrate it so it's only meatballs,
11:56:04 20 eat all the spaghetti and go, okay, I have six meatballs
11:56:08 21 left. Or you can take that bowl of spaghetti with the
11:56:09 22 meatballs and lay it out on a big table so those spaghetti
11:56:15 23 noodles are not on top of each other, but you're going to
11:56:18 24 have to look over the whole table to count how many
11:56:22 25 meatballs are in there.

11:56:23 1 And that's what you have to do if you don't
11:56:25 2 concentrate this method. You have to spread it out and
11:56:28 3 dilute it so now if you want to get the same kind of
11:56:34 4 sensitivities that we're getting, instead of 100 grid
11:56:37 5 openings, you might have to go to a thousand grid openings.

11:56:41 6 Q So what you're saying is, is to make this
11:56:43 7 illustration with the hay, what I really need to do is count
11:56:47 8 how many needles it was by their method, go ahead and spread
11:56:52 9 the hay out all over the floor, that would get me in bad
11:56:55 10 trouble, so we'll just say it and not do it.

11:56:59 11 A I swear I thought you were going to do it.

11:57:03 12 Q I don't want the judge to throw me out. I mean,
11:57:06 13 they should -- and then they don't concentrate and then they
11:57:11 14 cut down on the number they look at. They look at less?

11:57:15 15 A Well, no. It's standard -- they're not doing --
11:57:18 16 if the sample is not these trace samples where you have so
11:57:22 17 little, so little of the asbestos fibers as compared to what
11:57:27 18 else is in there, these are standard methods; 10, 20 grid
11:57:31 19 openings. As long as you have a sample you're looking at
11:57:34 20 that has a lot of asbestos in it, we're dealing with a lot
11:57:38 21 of times samples that have 10 percent, 15 percent,
11:57:42 22 20 percent asbestos.

11:57:43 23 What we're talking about, hundreds and hundreds of
11:57:46 24 times less than that. So it becomes a problem. There's
11:57:50 25 nothing wrong with 10, there's nothing wrong with

11:57:53 1 transmission electron microscopy. It is the best method out
11:57:58 2 there.

11:57:58 3 I'm an electron microscopist. You just have to
11:58:01 4 know the strength and weaknesses, and you have to know what
11:58:05 5 it can tell you based on what you're using in there and your
11:58:09 6 sensitivity. That's the only issue I come up with. The
11:58:12 7 microscope is a great microscope.

11:58:14 8 Q So if Johnson & Johnson's experts aren't looking
11:58:17 9 at 100 openings, they're not concentrating, is their method
11:58:22 10 as sensitive, will they be able to find the needles as
11:58:27 11 readily as your approach, or that of Blount, or that of
11:58:31 12 Pooley, that of the FDA, that was written up in those
11:58:34 13 earlier documents?

11:58:36 14 A No, it makes it a lot more difficult. You have to
11:58:39 15 dilute the sample so you don't get too much talc in there.
11:58:43 16 So they're starting with a lot less weight of sample than we
11:58:47 17 are. We're using 25 milligrams, which is not a lot. You
11:58:52 18 know, their analysts are using a tenth of a milligram or so.
11:58:58 19 Because they can't -- they can't overload the filter.
11:59:03 20 Because they're not getting rid of the talc. Too much talc
11:59:05 21 in there, if you don't dilute it, spread it all out, you're
11:59:09 22 going to overload the sample and you can't analyze it.

11:59:12 23 Q Okay.

11:59:13 24 MR. LANIER: Your Honor, at this point, just
11:59:14 25 to give a sample, I've got a demonstrative of Plaintiffs'

11:59:19 1 4633, which is the mathematics that have been worked out by
11:59:26 2 the expert, Dr. Longo, to explain the sensitivity conclusion
11:59:31 3 he's got. I don't want to walk through all of the math, but
11:59:35 4 I want to make sure --

11:59:37 5 MR. DUBIN: For demonstrative purposes, no
11:59:38 6 objection.

11:59:38 7 THE COURT: Will be received for that
11:59:40 8 purpose.

11:59:40 9 MR. LANIER: Thank you, Judge.

11:59:42 10 Q (By Mr. Lanier) So you've actually taken a Johnson
11:59:44 11 & Johnson TEM method and walked through all of the math
11:59:48 12 necessary?

11:59:51 13 A Yes.

11:59:55 14 Q And then come to the conclusion of how much
11:59:59 15 asbestos fiber per gram that could be there that Johnson &
12:00:04 16 Johnson would never be able to find, or report?

12:00:14 17 A Yes and no.

12:00:15 18 Q Okay. Explain to us -- before we look at the
12:00:17 19 numbers, explain to us what this means -- come on focus,
12:00:26 20 there we go. Explain to us what it means.

12:00:29 21 A So, I did the calculation based on their protocol,
12:00:34 22 their recipe, this is what they said how much they start
12:00:38 23 with, this is how they prepare the sample, this is what they
12:00:42 24 do when they get it into the transmission electron
12:00:44 25 microscope. This is based on 10 grid openings.

12:00:47 1 If they were to look at 20 grid openings, then
12:00:49 2 their sensitivity increases. So to find one fiber, if you
12:00:55 3 go to the top, one fiber, there has to be a certain
12:00:59 4 concentration in that talc sample. And finding one fiber,
12:01:03 5 using their method, there has to be approximately 14 million
12:01:08 6 asbestos fibers in that gram of talc.

12:01:11 7 Q All right. Let me take a step back. So if there
12:01:15 8 are four tremolite fibers that they find in their 10 grid
12:01:22 9 examination?

12:01:23 10 A 10 grid openings.

12:01:24 11 Q 10 grid openings. You've said before four fibers
12:01:28 12 are generally not reported. It's got to be five of the same
12:01:31 13 type, according to Johnson & Johnson's method, right?

12:01:34 14 A Yes.

12:01:35 15 Q All right. So this gets reported as no asbestos?

12:01:39 16 A I think they say below the detection limit, or
12:01:43 17 it's not quantifiable. No structure's detected. So there's
12:01:48 18 a few different things that they say.

12:01:50 19 Q Actually, and this is -- the jury will hear this
12:01:52 20 from their witnesses. Their witnesses have said zero, no
12:01:57 21 asbestos, asbestos-free, absolutely none, okay. So if
12:02:04 22 they're saying it off of the tests that you've seen when
12:02:07 23 they just say if it's four tremolite fibers, they're going
12:02:11 24 to report it as none, how many fibers would be in a gram of
12:02:16 25 Johnson & Johnson Baby Powder that the company will never

12:02:24 1 report and say do not exist?

12:02:28 2 A Based on those calculations, it would be
12:02:31 3 approximately 57 million asbestos structures in a gram,
12:02:37 4 because that's the detection limit of four fibers.

12:02:43 5 Q And by the same token?

12:02:45 6 A Got to be five, and they'll say, yes, it's there.

12:02:48 7 Q A gram, this is the big jumbo, 22-ounce.

12:02:56 8 A That makes it easy for me. I forgot they put the
12:02:59 9 623 grams.

12:03:00 10 Q 623 grams. And you're saying each one of those
12:03:04 11 can have 56 million asbestos fibers and be reported by the
12:03:10 12 company as asbestos-free and get a zero finding?

12:03:14 13 A Typically no structures detected.

12:03:18 14 Q And by the same token, let's say instead of four
12:03:21 15 there are eight asbestos fibers found, four of them are
12:03:24 16 tremolite and four of them are anthophyllite. Under the
12:03:29 17 Johnson & Johnson method, is it a positive finding?

12:03:36 18 A Typically not unless it has five each. They could
12:03:41 19 have five tremolite fibers and they would say positive
12:03:45 20 weight percent, and the four anthophyllite fibers that would
12:03:54 21 not be reported typically.

12:03:55 22 Q Have you found both tremolite asbestos and
12:03:58 23 anthophyllite in the baby powder?

12:04:01 24 A Yes, sir.

12:04:02 25 Q And this, again, is 113 million fibers in each

12:04:07 1 gram, so you'd multiply that times 623 for this bottle?

12:04:13 2 A Yes, sir.

12:04:18 3 Q And it continues down with all of the different
12:04:21 4 kinds of fibers that have been found in the baby powder; is
12:04:24 5 that fair to say?

12:04:25 6 A That's fair.

12:04:28 7 Q Now, this lack of sensitivity. Is it important
12:04:35 8 when you're doing the TEM to look at more openings or less?

12:04:41 9 A It's always better to look at more grid openings.
12:04:44 10 The position or the test is always better if you do more.
12:04:50 11 So, if you don't concentrate it and you want to find that
12:04:54 12 one fiber, instead of looking at 10, 20 or 30 fiber grid
12:05:00 13 openings, some scientists have done this in the past,
12:05:04 14 they've looked at a thousand grid openings, or 800 grid
12:05:07 15 openings.

12:05:08 16 Now, a magnification of 25,000 times, that's like
12:05:13 17 a small grid opening, that's a lot of area to cover in that
12:05:17 18 magnification, so it takes a long time even for 100 grid
12:05:24 19 openings. You could spend days on one sample, and we have.

12:05:28 20 Q Do you know what that is?

12:05:30 21 A Squiggly lines and a circle.

12:05:33 22 Q Okay. You draw your own next time. That is an
12:05:37 23 Easter egg.

12:05:38 24 A Ah.

12:05:41 25 Q Your kids ever hunt Easter eggs or you growing up?

12:05:45 1 A I've not only hunt Easter eggs, I have put plenty
12:05:50 2 of Easter eggs out for my kids to find. And I periodically
12:05:55 3 find them throughout the year, the ones I forget where I
12:05:59 4 could stick them.

12:06:01 5 Q In that regard, if you really want to find the
12:06:03 6 Easter eggs, if you really want to find them, it's important
12:06:08 7 to you to find them, do you look everywhere or do you quit
12:06:13 8 looking after you've done 10 percent or 20 percent or
12:06:17 9 30 percent?

12:06:20 10 A It depends on which of my kids do it. No, it's a
12:06:25 11 good analogy. If you're -- say you're all out in the
12:06:29 12 backyard. You should look all over in the backyard. Not
12:06:33 13 just in the flowerbeds. If you can concentrate all those
12:06:37 14 eggs in the flowerbeds, then just look in the flowerbeds and
12:06:41 15 you'll find them all.

12:06:43 16 So it's a good analogy on -- because we're looking
12:06:46 17 at area. It's real estate that we're looking at these high
12:06:51 18 magnifications.

12:06:53 19 I watched the game last night, you know,
12:06:56 20 basketball. Real easy to look at everything on a
12:07:01 21 basketball. It's nine and a half inches. Magnify it 25,000
12:07:05 22 times, it's now almost -- a little bit over 4 miles in
12:07:08 23 diameter. It takes a while to search all around that
12:07:12 24 surface of that basketball looking for that magnification.

12:07:15 25 Same thing with a transmission electron

12:07:16 1 microscope. When you're looking at 25,000 times in that
12:07:22 2 small opening, it's a lot of real estate. So it takes a
12:07:26 3 long time, but you got to look at them all.

12:07:28 4 Q All right. Doctor, let's move on past that, and
12:07:32 5 we're going to come to the next stop on our road. We've got
12:07:36 6 two more stops. One -- this next stop is Plaintiffs'
12:07:40 7 exposure, okay?

12:07:42 8 A Yes, sir.

12:07:42 9 Q Did you actually do some work trying to determine
12:07:46 10 how much the plaintiffs have been exposed to through the
12:07:54 11 calculations that you've been able to make and that you've
12:07:57 12 seen from some other folks you've worked with?

12:08:00 13 A Yes, sir.

12:08:01 14 Q All right. First of all, in his opening, Mr.
12:08:08 15 Bicks said that asbestos has been found to cause ovarian
12:08:13 16 cancer, but only in what he called causal association
12:08:20 17 between asbestos, page 839, your Honor, and cancer of the
12:08:25 18 ovary was clearly established. And then he says: But they
12:08:29 19 talk about heavy occupational exposure. People who work in
12:08:33 20 factories. And some of the studies go back to crocidolite.

12:08:39 21 Have you looked at heavy occupational exposure
12:08:44 22 before?

12:08:46 23 A Yes. Heavy is very subjective. I've looked at
12:08:50 24 that occupational exposures of folks for a lot of years who
12:08:54 25 worked with what I would call regular construction asbestos

12:08:59 1 products. You know, products that either primarily they're
12:09:03 2 installing or products that where people were making them,
12:09:07 3 but it's primarily folks who are using the end product,
12:09:11 4 asbestos-containing thermal insulation or insulating cement
12:09:14 5 or joint compound, those type of products. And make
12:09:18 6 calculations on what their occupational exposure is.

12:09:23 7 Q So you've actually made calculations for
12:09:24 8 occupational exposure; is that right?

12:09:28 9 A I have.

12:09:28 10 Q And have you made calculations for the exposure
12:09:30 11 with these ladies?

12:09:35 12 A I looked over and verified exposures that --
12:09:41 13 occupational exposures that were determined for these folks.

12:09:43 14 Q And those were the ones done by Dr. Egilman, the
12:09:48 15 occupational health/science expert that if we've got time
12:09:53 16 we'll put on the stand, if we don't -- or don't need to put
12:09:56 17 him on in rebuttal then we will not.

12:09:58 18 But you actually looked at his figures and relied
12:10:01 19 upon those along with your testing?

12:10:03 20 MR. DUBIN: Your Honor, I'm going to object.
12:10:04 21 We're getting into Dr. Egilman's opinions.

12:10:10 22 MR. LANIER: I'm going to his, your Honor,
12:10:12 23 he's relied upon.

12:10:13 24 THE COURT: I'll give a little leeway.
12:10:15 25 Overruled at this point.

12:10:17 1 Q (By Mr. Lanier) You have looked at those figures?

12:10:19 2 A I have.

12:10:19 3 Q You've done the testing before for occupational
12:10:22 4 exposure?

12:10:23 5 A Done the calculations for occupational exposure,
12:10:26 6 yes.

12:10:26 7 Q And you have verified the things you've looked at
12:10:28 8 in trying to determine the exposure of these Plaintiffs?

12:10:32 9 A Yes. I went through and redid calculations, the
12:10:37 10 calculations are correct.

12:10:38 11 Q Now, in this regard, how has the plaintiffs'
12:10:44 12 exposure compared?

12:10:45 13 MR. DUBIN: Your Honor, I'm going to object.
12:10:47 14 I think we're going to have to approach at this point.

12:10:49 15 THE COURT: Okay.

12:10:50 16 (Counsel approached the bench, and the
12:10:50 17 following proceedings were had:)

12:15:17 18 MR. DUBIN: I don't know exactly where he's
12:15:18 19 going here, but Dr. Longo didn't have dose calculations and
12:15:19 20 such for individual plaintiffs at his deposition. As I
12:15:20 21 understand what Mr. Lanier's trying to do right now is say,
12:15:21 22 well, since your deposition have you reviewed and verified
12:15:22 23 Dr. Egilman's work, and then to have Dr. Longo talk about
12:15:23 24 what Dr. Egilman found, which is not appropriate.

12:15:24 25 If I knew he was going to do any calculations for

12:15:25 1 these plaintiffs then we would have deposed him on this
12:15:27 2 issue. It's not what he indicated he was going to do in
12:15:28 3 this case.

12:15:28 4 MR. LANIER: In his deposition he
12:15:29 5 specifically said that these people had significant
12:15:30 6 exposure. This gentleman had a full deposition with him.
12:15:31 7 Never asked him what he meant by significant. That's all
12:15:32 8 I'm asking him. He's termed it significant. I want him to
12:15:33 9 explain what significant is.

12:15:34 10 I presented him for a deposition. He could ask
12:15:35 11 anything he wanted. When someone uses a term like that,
12:15:36 12 it's like saying it's a long string, how long is it? That's
12:15:38 13 incumbent upon Mr. Dubin to ask those questions.

12:15:39 14 MR. DUBIN: Your Honor, if he's going to do
12:15:39 15 dose calculations, if he's just going to say they had
12:15:41 16 significant exposure with no quantification of that at all.

12:15:42 17 THE COURT: Well, he said in his deposition
12:15:43 18 significant exposure?

12:15:43 19 MR. LANIER: Yes.

12:15:43 20 MR. DUBIN: Again, I need to look in his
12:15:44 21 deposition what he said about that. I'm happy to over the
12:15:45 22 noontime. I know he did not do dose calculations, all he
12:15:47 23 did was largely look at Felsher's notes. In other words, to
12:15:48 24 see that they used baby powder.

12:15:49 25 He didn't, for example, take exposure numbers that

12:15:50 1 you would expect from baby powder and try to figure out a
12:15:52 2 dose that any of these people had. Dr. Egilman tried to do
12:15:53 3 that.

12:15:53 4 THE COURT: You're not going to ask him about
12:15:54 5 dose?

12:15:54 6 MR. LANIER: Actually, I am in the extent
12:15:55 7 that he did that test, the below the waist test. Yes, he
12:15:56 8 did that test, and that's the basis of the numbers that have
12:15:58 9 been used.

12:15:58 10 THE COURT: If it's a test he did that's
12:15:59 11 different, but you were saying dose calculations of someone
12:16:00 12 else?

12:16:00 13 MR. DUBIN: I expect him to talk about what
12:16:01 14 the dose calculation was for what the number was that he
12:16:02 15 himself has said he has no -- so what he did for the below
12:16:04 16 the waist study is took his highest concentration bottle,
12:16:05 17 which is from before when there was really even --

12:16:06 18 THE COURT: Okay. Mr. Dubin, that's going to
12:16:06 19 go to the weight. What I'm going to allow him to testify to
12:16:08 20 opinions that he's stated in the deposition. If he's used
12:16:10 21 significant exposure in his deposition, then that's going to
12:16:11 22 be talked about here. What that actually means is subject
12:16:12 23 to cross-examination.

12:16:12 24 MR. DUBIN: I understand. In terms of the
12:16:13 25 quantification of this, he has never said that that number

12:16:14 1 is representative of the exposures that any of the
12:16:16 2 plaintiffs in this case. For example, he took the highest
12:16:17 3 bottle that he could find from a time period when a lot of
12:16:18 4 these people weren't even using the product.

12:16:20 5 THE COURT: That all goes to the weight of
12:16:21 6 his testimony.

12:16:21 7 MR. LANIER: And in fairness, the witness
12:16:22 8 also said that he relied upon Dr. Egilman's work, and Dr.
12:16:23 9 Egilman you got to depose fully on all of this because he's
12:16:25 10 the one that did the calculation.

12:16:26 11 MR. DUBIN: My understanding is he's going to
12:16:26 12 rely on his own data. Dr. Longo's going to rely on his own
12:16:28 13 data to do this calculation. If we're getting further into
12:16:29 14 that and Dr. Longo's now going to try to do Dr. Egilman
12:16:30 15 light without him on the stand, that's different.

12:16:31 16 THE COURT: He's going to be able to testify
12:16:32 17 as to his opinions and his calculations. He's going to be
12:16:33 18 able to testify of any other opinions that he stated in his
12:16:35 19 deposition and that you had the opportunity to cross-examine
12:16:36 20 on. So that's the parameters. That's the guardrails we're
12:16:38 21 in right now. Anything outside of that we'll take it up at
12:16:39 22 the sidebar.

12:16:39 23 MR. DUBIN: Okay. I understand, Judge.

12:16:40 24 (The proceedings returned to open court.)

12:16:41 25 THE COURT: Ready to proceed?

12:16:41 1 MR. LANIER: Thank you, your Honor.

12:16:41 2 Q (By Mr. Lanier) All right. Sir, to continue. You
12:16:42 3 used a term for the exposure that the plaintiffs had when
12:16:44 4 you gave a deposition in this case. Do you remember what
12:16:45 5 your term was?

12:16:45 6 A Significant exposure.

12:16:46 7 Q What do you mean by that term?

12:16:46 8 A That it is a measurable amount of exposure that
12:16:47 9 would be above, quote, background exposures in the ambient
12:16:49 10 air. So a minimum is 10 to 20 times above what you would --
12:16:50 11 what some people would say is normally in everyday air that
12:16:52 12 you breathe.

12:16:52 13 Q Now, our intent is to play some portion of a
12:16:53 14 deposition of Dr. Egilman to the jury, where Dr. Egilman
12:16:55 15 performed actual calculations. Did you verify those
12:16:56 16 calculations?

12:16:56 17 A I did.

12:16:57 18 Q And do they confirm with what you said to the jury
12:16:58 19 and to Mr. Dubin when he deposed you, is that this is
12:16:59 20 significant exposure to asbestos for these plaintiffs?

12:17:00 21 A Yes, they do.

12:17:01 22 Q By the same token, are you able to say, is there a
12:17:02 23 difference between occupational exposure and Plaintiff
12:17:03 24 exposure, just in the mechanics of how it's done?

12:17:04 25 A There's a big difference.

12:17:05 1 Q Explain what you mean, please.

12:17:06 2 A People who use asbestos products or manufacture
12:17:07 3 asbestos products, they don't take the powder of the product
12:17:11 4 that has asbestos in it and sprinkle it on themselves every
12:17:15 5 day. Or put it in their groin area in their underwear or
12:17:19 6 put it under their arms. That's a whole different type of
12:17:22 7 exposure than using a product that, yes, you're getting dust
12:17:26 8 on you, but you're not taking that asbestos product and
12:17:30 9 throwing, not throwing it, but in a bottle and shaking it on
12:17:34 10 yourself day, every day, or six or seven or eight times to
12:17:39 11 your kid who you're changing the diaper. That's a whole
12:17:43 12 different exposure.

12:17:44 13 It's not what happens when people actually use
12:17:48 14 asbestos products because they're using it for a reason.
12:17:50 15 Putting it on a wall or they're sanding a brake shoe that
12:17:54 16 has asbestos in it. The dust from that asbestos product,
12:17:59 17 put it in a bottle, and every day shaking it on themselves.

12:18:05 18 Q So, have you ever found any industrial exposure
12:18:10 19 where people are taking the asbestos and shaking it on
12:18:13 20 themselves and around their nose?

12:18:17 21 A No. No, I've never seen an actual work practice
12:18:22 22 with an asbestos product where that is going on.

12:18:25 23 Q Now, certainly they're still breathing it, is that
12:18:29 24 fair to say? The industrial workers?

12:18:31 25 A Yes, sir. They're not holding their breath.

12:18:33 1 They're still breathing, and they're having very significant
12:18:36 2 exposures. But think about instead of pouring the
12:18:40 3 asbestos-containing joint compound, which can have as little
12:18:44 4 as 1 to 2 percent asbestos in powder, instead of pouring it
12:18:48 5 in a bucket and pouring water in there, pouring it in a
12:18:52 6 container and taking it home to use as body powder. That's
12:18:57 7 a whole nother level of exposure.

12:18:59 8 Q So, mr. Bicks wants to say that the studies that
12:19:02 9 are so clear on asbestos causing ovarian cancer were
12:19:05 10 occupational exposure studies, do you put the plaintiffs'
12:19:09 11 exposures in the same category based upon your experience?

12:19:13 12 A Yes, sir, I would.

12:19:16 13 Q All right. Now, have you looked at and produced a
12:19:22 14 summary of the number of asbestos fibers that these
12:19:27 15 plaintiffs would have breathed, is that math work yours or
12:19:32 16 Dr. Egilman's?

12:19:34 17 A That was Dr. Egilman's. I just verified that the
12:19:37 18 math worked and looked at where he got his formula and
12:19:42 19 verified because we do the same stuff.

12:19:44 20 Q All right.

12:19:46 21 MR. LANIER: Judge, I am still trying to get
12:19:47 22 through with him before lunch, but with an understanding
12:19:50 23 that perhaps we can talk about this at sidebar before I
12:19:54 24 officially pass him, and I might come back for one more
12:19:57 25 thing, but I'll wait and do it while the jury's eating lunch

12:20:00 1 if that's okay, in the interest of time.

12:20:03 2 Q (By Mr. Lanier) Now, did you, in computing how
12:20:07 3 much these folks were exposed to and how many fibers they
12:20:11 4 were exposed to, did you use certain resources?

12:20:18 5 A Yes.

12:20:18 6 Q Can you tell the jury about how you went about
12:20:20 7 determining the significant exposure of the plaintiffs? I
12:20:23 8 guess, first, can you give us a range of their exposure?

12:20:27 9 A The ranges for their exposures were approximately
12:20:31 10 0.3 or 0.4 fiber years up to 32 fiber years, I believe was
12:20:37 11 on the high end.

12:20:38 12 Q And fiber years, I got to tell you, I still don't
12:20:43 13 understand after doing this stuff for a long time. Is that
12:20:49 14 a lot of fibers?

12:20:52 15 A I guess it depends if you're -- what receiving end
12:20:55 16 you're on. Fiber years, think of this way. If a person
12:20:59 17 smokes a pack of cigarettes every day, a whole pack, in one
12:21:04 18 year he has a one-cigarette pack exposure. If he does that
12:21:08 19 for 30 years, we'll say you have a 30-year cigarette pack
12:21:12 20 exposure.

12:21:13 21 If I'm in an occupation where I'm exposed every
12:21:17 22 day for eight hours one fiber per cc, that's -- at the end
12:21:21 23 of the day, is one fiber per cc. I do that for a whole work
12:21:26 24 year, I have a one fiber per cc, or one fiber exposure year.
12:21:31 25 If I do that for 25 years, I have a 25-fiber year exposure.

12:21:36 1 So it's sort of like an average of what's gone on
12:21:40 2 for your occupational asbestos, that's how they kind of
12:21:45 3 judge you. Some people call it a dose. I don't call it
12:21:48 4 dose. I call it a cumulative exposure assessment, where you
12:21:51 5 try to determine how often you're using the product, how
12:21:55 6 long, how close are you to it. If they're using hands-on or
12:22:00 7 not hands-on. And then what the exposures are, and you can
12:22:03 8 calculate this out.

12:22:04 9 Q Did you use some different resources -- let's
12:22:08 10 start with your own test, right? The shake test that y'all
12:22:13 11 did, right?

12:22:13 12 A Yes.

12:22:14 13 Q You measured the asbestos in the air, you told
12:22:16 14 that to the jury. We went through the numbers. You used
12:22:19 15 the highest content you could, worst case scenario, so we
12:22:25 16 can do the math back down from that. Fair?

12:22:28 17 A Fair. I wouldn't call that the worst case
12:22:31 18 scenario that was in one of the containers. I would expect
12:22:34 19 as we go along and do this research, we'll find containers
12:22:39 20 with more, we'll find containers with less. There was a
12:22:42 21 specific reason we used that high one in our test.

12:22:45 22 Q Tell the jury why.

12:22:46 23 A Because there have been published paper,
12:22:49 24 scientific peer-reviewed paper, where they did a study very
12:22:53 25 similar to this, but they didn't use Johnson & Johnson, they

12:22:56 1 used another manufacturer of cosmetic talc. They found that
12:23:00 2 the concentration in that particular sample that they used
12:23:04 3 in their study was a little bit higher than what we found, I
12:23:08 4 think it was 18 million per gram, so we wanted to do --

12:23:13 5 Q Just for the record, that's Cashmere Bouquet?

12:23:17 6 A Correct. I didn't know if I should say it or not.

12:23:20 7 Q It's fine. It's a courtroom.

12:23:21 8 A So, as a scientist I go, okay, I've got one that's
12:23:25 9 15 million per gram. Same kind of talc, cosmetic talc, can
12:23:30 10 I duplicate what they got doing something very similar. So
12:23:34 11 that's why we used that higher one because they used a high
12:23:39 12 one, and I wanted to see does Cashmere Bouquet or Johnson &
12:23:44 13 Johnson behave the same, and they had a different type of
12:23:48 14 asbestos. They had anthophyllite asbestos, primarily not
12:23:51 15 tremolite. Doesn't make a difference.

12:23:54 16 And what we found was no. Even though they had a
12:23:56 17 peer-reviewed paper, published it, they used the 18 million,
12:24:02 18 I used 15 million, we got very similar results.

12:24:05 19 Q Okay. So, also, did you get some statistics in
12:24:10 20 addition from NIOSH for how the baby dusting is done and how
12:24:14 21 much exposure there would be from using it on a baby?

12:24:18 22 A Yes.

12:24:19 23 Q And tell the jury why and what study you were
12:24:22 24 doing there.

12:24:23 25 A Well, NIOSH did a study where they measured the

12:24:27 1 fibers that were generated during a changing of a typical
12:24:32 2 baby, in changing the diaper.

12:24:35 3 So they changed the diaper, it was a doll, I'm
12:24:38 4 pretty sure, and then they measured how many fibers were in
12:24:42 5 the air, and they got, I think it was about an average of
12:24:45 6 2.2, I believe it was, or .2. I'd have to look at it again.

12:24:50 7 Q You get your work done, you give those numbers to
12:24:53 8 Dr. Egilman. Dr. Egilman does his work, he returns it to
12:24:59 9 you, and then you check his numbers and make sure that
12:25:01 10 they're right, and you testified that it was significant
12:25:03 11 exposure. Fair?

12:25:05 12 A Sort of. What's fair is I testified in my
12:25:09 13 deposition that these folks, these women, were going to have
12:25:13 14 significant exposure to asbestos from using this product.

12:25:18 15 The papers in the past, the published papers that
12:25:24 16 NIOSH did, that's pretty common for this, so Egilman -- Dr.
12:25:29 17 Egilman would use that, I looked at it and I agreed with it.
12:25:33 18 I did the calculations and verified it, so I don't have any
12:25:35 19 issues with what he stated.

12:25:36 20 Q Okay. What I'd like to do now is before we break,
12:25:39 21 if I can do it fairly quickly. We may come back to this
12:25:43 22 after lunch if it seems appropriate.

12:25:47 23 But I want to go to the final road, end of the
12:25:50 24 road for you, which is the stop I've termed Scientific
12:25:53 25 Truth. Okay. And I want to ask you some questions, very

12:26:00 1 much in line with the questions that I've asked Dr. Blount.

12:26:17 2 I'm going to set aside, in the interest of time,
12:26:19 3 all of the different studies that we can be looking at and
12:26:25 4 reports, and I just want to cut to the chase, okay?

12:26:28 5 A Yes, sir.

12:26:28 6 Q I showed this -- this is an exhibit from Dr.
12:26:32 7 Blount's deposition, it was Exhibit Number 10 to her
12:26:35 8 deposition. It was what I did at the very start with her.

12:26:38 9 After getting her name, I asked her: Have you
12:26:40 10 tested Johnson & Johnson Baby Powder for asbestos? She told
12:26:44 11 me yes, and I wrote it down. Did Johnson & Johnson Baby
12:26:46 12 Powder have asbestos? She told me yes. And I wrote it
12:26:51 13 down.

12:26:51 14 We found out later in the deposition she had done
12:26:54 15 multiple tests beyond just the one in the paper. I'm going
12:26:57 16 to use a purple pen for you, and I'm going to put Dr. Longo
12:27:02 17 here next to that.

12:27:03 18 And I want to ask you the same question, Dr.
12:27:06 19 Longo. I want to ask you: Did you test Johnson & Johnson
12:27:13 20 Baby Powder for asbestos?

12:27:18 21 A Yes.

12:27:21 22 Q How many bottles?

12:27:23 23 A I think we're up to either 36 or 37 bottles, 37
12:27:29 24 different containers.

12:27:32 25 Q And some of them off eBay. Mr. Bicks was right

12:27:36 1 when he said some were off eBay, supplied by lawyers. I've
12:27:40 2 sent you some that we've been able to buy, right?

12:27:44 3 A Correct.

12:27:44 4 Q Some were off the shelf?

12:27:46 5 A Yes.

12:27:46 6 Q Like Alice Blount's were off the shelf?

12:27:50 7 A Some were off the shelf.

12:27:52 8 Q What Mr. Bicks didn't tell the jury is one of them
12:27:55 9 came from the Johnson & Johnson museum, didn't it?

12:27:58 10 A Yeah. That's the 1978 historical sample.

12:28:01 11 Q And the 1978 historical sample that came -- no
12:28:06 12 lawyer touching it, playing with it?

12:28:12 13 A No, I don't think. I don't know if the lawyers
12:28:14 14 touched it or not. No, but it came from --

12:28:17 15 Q Johnson & Johnson?

12:28:17 16 A Johnson & Johnson.

12:28:18 17 Q And the one from Johnson & Johnson's museum, did
12:28:24 18 it have asbestos in it?

12:28:25 19 A Yes, sir.

12:28:28 20 Q The one that came from our client, Krystal Kim,
12:28:31 21 Krystal was back there yesterday. Stand up please, Krystal.
12:28:36 22 Did you test the bottle from her house?

12:28:38 23 A Yes.

12:28:38 24 Q Did it have asbestos in it?

12:28:40 25 A It did. So I think we're up to 37, I think it may

12:28:45 1 be 36 bottles. And out of the 36 bottles, 20 of them were
12:28:49 2 positive for asbestos in our analytical sensitivity. Our
12:28:59 3 analytical sensitivity is that finding one asbestos fiber
12:29:04 4 you have to have about 8,000 fibers were gram. That sounds
12:29:07 5 like a lot, but it's really -- for this procedure it's very
12:29:10 6 high-end level sensitivity, considering if you don't do the
12:29:14 7 concentration method and you do all the standard TEM method,
12:29:18 8 you're dealing with millions per gram before you'd have a
12:29:21 9 chance to find it.

12:29:23 10 Q And when you say you found it in only 20 of 37,
12:29:29 11 does that mean that the other 17 are asbestos-free?

12:29:34 12 A Well, no. Because we're using the heavy liquid
12:29:38 13 density method, one thing for sure we cannot find in there
12:29:43 14 is chrysotile asbestos. Because the weight, remember, we go
12:29:48 15 back to that cubic weight of chrysotile is really close to
12:29:51 16 talc. So I would never expect to find chrysotile.

12:29:57 17 Anthophyllite asbestos has a chemistry that could
12:30:00 18 make it about the same weight as the talc, all the way up to
12:30:04 19 where it has the same density -- same density as tremolite.

12:30:11 20 So most of the anthophyllite we found is ones that
12:30:14 21 have a lot of iron in it to give it more density. We have
12:30:17 22 found some in the past where they don't have that iron in
12:30:21 23 it, that was surprising, but then you think about it, we're
12:30:25 24 finding talc plates down there.

12:30:27 25 So, our research in the future would be to go back

12:30:31 1 and look at these samples, what I'll call the old method,
12:30:35 2 where you got to look at grid after grid after grid to see
12:30:39 3 if they're still below the detection limit. So you can't
12:30:43 4 ever say it's not there.

12:30:45 5 The method is really sensitive for tremolite but
12:30:48 6 not for anthophyllite, that's low iron, and not for
12:30:53 7 chrysotile asbestos.

12:30:56 8 MR. LANIER: Your Honor, at this point in
12:30:57 9 time I've got about one minute left before a good breaking
12:31:01 10 point, but if I could offer as a demonstrative Plaintiffs'
12:31:05 11 Exhibit 8351. I've given a copy to opposing counsel, as
12:31:09 12 well as one to the bench.

12:31:12 13 MR. DUBIN: No objection as to demonstrative.

12:31:13 14 THE COURT: This is 8351?

12:31:15 15 MR. LANIER: Yes, sir.

12:31:16 16 THE COURT: Will be received for that
12:31:16 17 purpose.

12:31:18 18 Q (By Mr. Lanier) So, we've got a chart put together
12:31:24 19 with pictures of different bottles that you have tested, and
12:31:31 20 I don't think these are all of them that have positive
12:31:33 21 findings, obviously I didn't put any of the ones that didn't
12:31:38 22 reach the sensitivity level for you to find anything.

12:31:41 23 I don't have any of those on here because we don't
12:31:44 24 know what the count might be, if any at all.

12:31:47 25 A You scared me. I'm going, they didn't find that

12:31:50 1 many per gram. That's the whole bottle.

12:31:53 2 Q This is the whole bottle, yes, yes. This is
12:31:55 3 something put together by Ms. Cooper so you better not fuss
12:32:01 4 with her.

12:32:01 5 A I'm not fussing. I'm just trying to understand.

12:32:05 6 Q All right. If I'm -- if I'm right and she may not
12:32:09 7 have done it, but she's the one that handed it to me. We've
12:32:12 8 got some pictures out here to the side so that the jury, as
12:32:16 9 we go through this maybe with some other witnesses, can see
12:32:19 10 some of the photos you took of the asbestos fibers.

12:32:23 11 But did you, in fact, find asbestos fibers that
12:32:26 12 work out to significant numbers in these various bottles?

12:32:31 13 A In my opinion, yes.

12:32:33 14 Q Okay. And in that regard, sir, I am going to --
12:32:43 15 your Honor, be at a point where I can -- I can break now,
12:32:53 16 and I'll either pass the witness right after lunch or I'll
12:32:56 17 get into one last matter with him.

12:32:59 18 THE COURT: Yes, sir.

12:32:59 19 MR. LANIER: Thank you, Judge.

12:33:00 20 THE COURT: All right. Ladies and gentlemen,
12:33:01 21 that gets us to the lunch hour. If we can go to 10 minutes
12:33:06 22 until two, if you would be upstairs subject to the call of
12:33:10 23 the sheriff.

12:33:11 24 Once again, thanks for your work this morning and
12:33:14 25 early afternoon. The Court again reminds you what we

12:33:18 1 discussed. Until the case is given to you to decide, please
12:33:21 2 do not do any research or investigation on your own. Keep
12:33:24 3 an open mind. Don't make any conclusions or decisions.

12:33:27 4 Don't let anyone try to talk to you about the
12:33:30 5 case, and don't do any research on the Internet. Or if any
12:33:38 6 information comes your way, please remove yourself from that
12:33:42 7 possibility of receiving that information and report the
12:33:45 8 contact to sheriff.

12:33:47 9 Thank you, all. We'll see you in a little while.
12:33:50 10 You are excused.

12:34:27 11 (The following proceedings were had in open
12:34:27 12 court, outside the presence and hearing of the jury:)

12:34:28 13 THE COURT: All right. You may be seated.
12:34:29 14 Anything on the record, Mr. Magee?

12:34:33 15 MR. MAGEE: No.

12:34:34 16 MR. DUBIN: I thought Mr. Lanier wanted to
12:34:36 17 raise this issue about what he's going to go into after
12:34:40 18 lunch, unless I'm wrong.

12:34:42 19 MR. LANIER: I don't need to be on the record
12:34:43 20 with it, your Honor. I just wasn't sure that I understood
12:34:46 21 the parameters of what you said at sidebar, and I didn't
12:34:49 22 want to cross anything. So I want to run through that with
12:34:52 23 you, and I'll try to put that together. If we could visit
12:34:56 24 with you five minutes before we get started.

12:34:59 25 THE COURT: I'll be back out at quarter to.

12:35:02 1 MR. LANIER: Thank you, Judge.

12:35:03 2 MR. DUBIN: That's fine, we'll do it then.

12:35:06 3 THE COURT: Court will be in temporary

12:35:07 4 recess.

12:35:25 5 (Court was held in recess for the noon hour.)

12:35:25 6 END OF VOLUME 6A. PLEASE REFER TO VOLUME 6B.

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CERTIFICATE

I, Jennifer A. Dunn, Registered Professional
Reporter and Certified Court Reporter, do hereby certify
that I am an official court reporter for the Circuit Court
of the City of St. Louis; that on June 7, 2018, I was
present and reported all the proceedings had in the case of
GAIL INGHAM, ET AL., Plaintiffs, vs. JOHNSON & JOHNSON,
Defendant, Cause No. 1522-CC10417-01.

I further certify that the foregoing pages
contain a true and accurate reproduction of the proceedings.

"/s/JENNIFER A. DUNN, RPR, CCR #485"

BY MR. LANIER: [1] 1023/17 DEPUTY HUBBARD: [1] 972/21 MR. LANIER: [1] 1043/3 MR. DUBIN: [58] 964/5 965/9 965/23 966/2 966/10 967/5 968/3 968/15 968/22 969/4 969/15 970/1 971/11 971/25 972/9 972/24 978/1 978/6 989/18 990/4 990/8 993/4 994/6 994/9 994/13 1006/10 1008/8 1012/22 1023/4 1027/18 1027/22 1031/6 1032/2 1032/15 1032/20 1033/15 1034/10 1034/20 1036/16 1038/3 1041/3 1043/6 1044/11 1047/15 1054/8 1060/4 1066/19 1067/12 1067/17 1068/13 1068/19 1069/12 1069/23 1070/10 1070/22 1081/12 1083/15 1084/1 MR. LANIER: [62] 964/19 965/2 966/3 966/18 967/22 968/14 968/16 968/21 969/5 969/17 970/10 971/4 972/17 973/8 973/17 974/21 975/3 977/23 978/7 978/11 989/10 989/16 989/23 994/4 994/8 994/12 994/19 996/15 996/19 1000/20 1000/22 1006/6 1011/23 1023/2 1023/13 1031/3 1031/9 1032/8 1033/1 1034/1 1034/15 1034/23 1036/14 1036/19 1041/1 1043/8 1054/6 1054/12 1059/23 1060/8 1066/21 1068/3 1068/18 1069/5 1070/6 1070/25 1073/20 1081/7 1081/14 1082/18 1083/18 1083/25 MR. MAGEE: [3] 972/10 972/14 1083/14 MR. WILSON: [1] 985/25 THE COURT: [79] 964/4 964/17 964/21 965/1 965/21 965/25 966/16 967/23 968/12 968/18 969/3 970/7 971/2 971/24 972/3 972/13 972/15 972/18 972/22 972/25 973/4	973/10 973/15 975/2 978/4 978/9 989/21 990/7 990/9 993/8 994/11 994/17 996/18 1000/21 1006/9 1006/14 1008/10 1012/24 1022/1 1022/8 1022/22 1022/25 1023/3 1023/5 1023/9 1023/15 1027/20 1031/7 1032/18 1032/23 1034/8 1034/13 1034/18 1034/21 1034/25 1036/17 1038/4 1041/4 1043/7 1044/13 1047/17 1054/10 1060/6 1066/23 1067/14 1068/16 1069/3 1069/9 1069/17 1070/4 1070/15 1070/24 1081/13 1081/15 1082/17 1082/19 1083/12 1083/24 1084/2 THE WITNESS: [3] 964/23 1022/6 1022/24 \$ \$20,000 [1] 977/2 ' '30s [1] 993/12 '40s [1] 993/12 '53 [1] 985/19 '60s [1] 1027/10 '64 [1] 985/19 '70s [2] 1026/5 1027/11 '73 [2] 1043/1 1043/3 . .0.0 [1] 1051/17 .00 [1] 1011/7 .006 [1] 1011/7 .05 [2] 1042/8 1042/21 .05 percent [2] 1042/8 1042/21 .1 [2] 1012/10 1012/18 .2 [1] 1077/6 .3 [2] 1012/18 1012/19 .3 percent [1] 1012/19 .5 [2] 1007/16 1012/11 .5 percent [1] 1012/11 / /s/JENNIFER [1] 1085/16 0 0.000 [2] 1010/12 1052/24 0.05 percent [1] 1042/19 0.06 [1] 1010/16 0.1 [1] 1012/8 0.11 [1] 1052/13 0.3 [1] 1074/10 0.4 [1] 1074/10 01 [2] 1/7 1085/8	041 [1] 981/8 07580 [1] 1034/15 1 1 million [1] 980/20 1 percent [1] 1012/19 1,000 [1] 981/1 1.95 [1] 981/4 10 [21] 980/15 981/3 1003/9 1026/23 1050/1 1055/1 1055/25 1055/25 1056/1 1056/1 1056/18 1058/18 1058/25 1060/25 1061/8 1061/10 1061/11 1063/12 1071/10 1078/7 1082/21 10 percent [3] 1021/8 1058/21 1064/8 100 [12] 1055/20 1056/1 1056/4 1056/5 1056/8 1056/10 1056/11 1056/15 1056/21 1058/4 1059/9 1063/18 100 percent [1] 1001/3 10019-6142 [1] 2/19 1006 [1] 4/6 1031 [1] 4/7 1036 [1] 4/8 1041 [1] 4/9 1043 [1] 4/10 1054 [1] 4/11 1060 [1] 4/12 1081 [1] 4/13 1085 [1] 3/8 11 [2] 1022/5 1052/13 113 million [1] 1062/25 11th [1] 977/22 1202 [3] 4/6 1006/8 1006/17 14 [1] 986/11 14 million [1] 1061/5 14-ounce [4] 987/25 988/2 988/5 988/10 15 [4] 1022/2 1022/20 1037/7 1037/9 15 million [6] 985/21 985/23 986/10 988/20 1076/9 1076/18 15 percent [2] 1026/24 1058/21 1522-CC10417-01 [2] 1/7 1085/8 17 [2] 1045/17 1080/11 18 [3] 1041/14 1041/25 1045/17 18 million [2] 1076/4 1076/17 18 pounds [1] 1009/22 18th [1] 1043/22 1900's [1] 993/8 1900s [6] 992/23 993/4 993/10 993/10 993/17 993/19 1940 [1] 993/19 1940s [1] 993/16 1953 [1] 985/18	1960 [1] 2/10 1960s [1] 1037/3 1972 [2] 1042/13 1042/23 1973 [7] 1041/1 1041/12 1042/14 1042/24 1043/13 1044/21 1048/12 1976 [5] 1038/16 1038/24 1039/25 1040/7 1040/25 1978 [2] 1079/10 1079/11 199 [2] 978/24 997/18 1990 [1] 1040/11 1991 [3] 1031/19 1033/12 1034/4 2 2 percent [1] 1073/4 2.2 [1] 1077/6 2.6 [1] 1030/12 2.85 [1] 1030/9 20 [10] 986/2 1049/23 1049/25 1056/19 1058/18 1061/1 1063/12 1071/10 1080/1 1080/10 20 percent [2] 1058/22 1064/8 2001 [1] 1006/21 2018 [4] 1/16 964/2 977/22 1085/5 21 [1] 983/2 211 [1] 2/21 22 ounces [1] 988/12 22-ounce [4] 987/25 988/14 988/19 1062/7 223 [1] 982/1 25 [6] 980/3 1003/9 1037/3 1041/19 1059/17 1074/25 25,000 [3] 1063/16 1064/21 1065/1 25-fiber [1] 1074/25 2555 [1] 2/24 2700 [1] 2/21 28 [1] 986/11 28.3 [1] 986/6 3 3.1 [1] 1030/13 30 [5] 976/10 986/11 1025/11 1063/12 1074/19 30 percent [1] 1064/9 30-year [1] 1074/19 300 [1] 2/6 315 million [1] 987/12 32 [1] 1074/10 33 [1] 1049/17 35 [1] 1056/19 36 [3] 1078/23 1080/1 1080/1 360 [1] 992/2 37 [4] 1078/23 1078/23 1079/25 1080/10 38 [1] 986/11	4 40 [6] 4/10 1014/24 1043/5 1043/8 1049/23 1049/25 42 [1] 986/11 45 [2] 1011/6 1025/11 454 [1] 1011/5 4633 [2] 4/12 1060/1 485 [2] 1/23 1085/16 5 5 percent [1] 1021/8 5.9 billion [2] 988/7 988/8 50 [4] 1056/9 1056/9 1056/11 1056/21 51 [5] 2/18 4/9 1041/3 1041/5 1041/8 52nd [1] 2/18 56 million [1] 1062/11 57 million [1] 1062/3 5862 [2] 4/5 989/12 6 60s [1] 1026/5 6142 [1] 2/19 623 [3] 1062/9 1062/10 1063/1 63 million [1] 987/14 630 million [2] 986/13 987/7 63101 [1] 2/6 63102 [1] 2/22 64108 [1] 2/24 65329-041 [1] 981/8 66 [1] 1007/12 6718 [4] 4/4 977/25 978/8 982/11 6810 [1] 2/10 6824 [6] 4/8 1036/16 1036/18 1036/23 1036/25 1040/7 6A [3] 1/14 964/1 1084/6 6B [1] 1084/6 7 73 [1] 994/6 7580 [3] 4/7 1031/5 1031/8 77069 [1] 2/11 8 8,000 [1] 1080/4 800 [1] 1063/14 801 [1] 2/6 80s [1] 1031/17 820 [1] 1005/7 8215 [3] 4/11 1054/8 1054/15 8219 [2] 974/23 975/2 830 [1] 991/1 831 [1] 1023/23 8351 [3] 4/13 1081/11 1081/14 839 [1] 1065/17 9 9 billion [1] 988/18
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<p>9 9.7 [1] 981/3 90 [1] 1014/1 964 [1] 3/4 973 [1] 3/7 978 [1] 4/4 98 [1] 1001/4 989 [1] 4/5</p>	<p>1061/21 abstract [1] 967/17 academic [1] 1027/25 according [6] 1014/8 1040/6 1042/14 1048/22 1048/23 1061/13 account [3] 1007/19 1020/8 1020/14 accounting [2] 1020/6 1020/10 accurate [1] 1085/10 acorn [1] 1020/1 actinolite [4] 1012/16 1012/17 1048/4 1048/6 acts [1] 969/25 actual [5] 984/23 993/13 1055/15 1071/15 1072/21 actually [17] 978/23 1008/16 1018/6 1018/16 1024/1 1025/20 1036/12 1049/3 1050/24 1060/10 1061/19 1065/9 1066/7 1066/18 1069/6 1069/22 1072/13 add [1] 1028/19 addition [2] 982/10 1076/20 additional [2] 985/6 1032/7 address [1] 964/7 addressed [1] 972/8 adequate [1] 1009/10 adjacent [1] 1004/22 Administration [1] 1035/15 admission [2] 969/2 1033/25 admit [2] 994/15 1006/12 admitted [1] 989/21 adult [1] 982/24 adults [1] 1050/9 advance [1] 999/12 affect [1] 966/23 affirmatively [1] 965/13 after [15] 981/22 1021/9 1023/8 1023/24 1046/11 1055/11 1057/8 1064/8 1074/13 1077/22 1078/9 1081/2 1081/2 1082/16 1083/17 afternoon [1] 1082/25 again [22] 966/11 966/15 968/7 976/7 989/19 993/23 994/14 999/22 1006/11 1013/8 1022/19 1024/20 1035/4 1038/21 1043/10 1047/16 1054/5 1062/25 1068/20 1077/6 1082/24 1082/25 against [3] 966/5</p>	<p>1030/16 1053/19 ago [1] 1037/15 agencies [1] 1024/25 ago [1] 986/2 agree [5] 972/2 980/1 980/4 1007/8 1044/23 agreed [4] 965/20 966/15 970/22 1077/17 agreeing [1] 1037/10 agreement [1] 964/13 Ah [2] 1015/9 1063/24 ahead [3] 1019/3 1022/4 1058/8 aims [1] 1038/7 air [19] 975/14 975/15 976/2 976/14 984/23 985/3 985/5 985/6 985/7 985/8 1020/10 1030/1 1049/14 1053/13 1055/7 1071/10 1071/11 1075/13 1077/5 airborne [2] 983/19 985/10 al [4] 1/5 1/8 2/3 1085/7 Alice [7] 4/7 977/11 993/1 1033/5 1041/25 1045/16 1079/6 align [1] 998/4 aligned [1] 1004/10 all [148] allow [2] 970/9 1069/19 allowed [1] 968/25 allows [1] 1049/9 almost [3] 980/15 981/3 1064/22 along [7] 965/17 974/5 979/11 1030/14 1041/20 1066/19 1075/19 already [5] 965/6 966/9 968/21 1045/5 1056/24 also [10] 984/17 985/1 992/21 1006/9 1006/23 1007/21 1033/8 1044/6 1070/8 1076/19 always [9] 970/13 988/4 999/11 999/16 1001/4 1029/22 1055/3 1063/9 1063/10 Alyssa [1] 2/16 am [9] 974/13 995/3 1004/17 1010/25 1049/5 1069/6 1073/21 1082/14 1085/4 ambient [1] 1071/9 among [1] 1022/12 amount [12] 985/6 991/8 992/5 1006/24 1007/22 1008/25 1010/2 1010/12 1018/8 1018/17 1027/6 1071/8 amounts [3] 1009/11 1047/24 1049/10 amphibole [17] 977/21 995/7 995/8 998/12 999/21 999/22 999/24</p>	<p>1000/3 1000/4 1000/6 1000/13 1031/6 1031/24 1032/1 1032/2 1035/3 1035/16 amphiboles [4] 1000/2 1035/4 1035/4 1035/6 analogy [5] 1017/20 1025/19 1057/14 1064/11 1064/16 analyses [1] 979/23 analysis [20] 976/11 977/20 979/17 992/1 993/14 1001/15 1006/18 1007/16 1010/2 1011/23 1021/14 1024/4 1024/6 1024/8 1044/25 1049/21 1055/2 1055/4 1055/15 1056/8 analyst [2] 1002/23 1055/2 analysts [1] 1059/18 analytical [19] 1010/2 1012/10 1016/18 1016/23 1017/4 1017/7 1017/18 1019/10 1027/4 1042/21 1049/8 1049/25 1050/19 1051/2 1051/7 1051/13 1053/9 1080/2 1080/3 analyze [5] 1015/12 1026/12 1041/22 1055/12 1059/22 analyzed [5] 985/9 986/22 1006/24 1007/23 1017/5 analyzing [4] 1016/20 1026/6 1041/9 1041/20 anchor [1] 1028/17 angles [1] 1001/12 animal [1] 1038/9 Anne [1] 2/16 another [15] 967/4 982/2 982/5 990/10 994/2 995/6 999/21 1000/6 1000/11 1005/4 1019/20 1022/2 1032/4 1053/11 1076/1 answer [3] 964/15 1005/22 1014/16 anthophyllite [13] 1009/1 1012/16 1019/18 1019/19 1019/20 1035/8 1062/16 1062/20 1062/23 1076/14 1080/17 1080/20 1081/6 anticipation [1] 965/8 any [46] 965/25 967/20 968/24 968/24 971/22 983/13 986/18 989/8 992/8 996/14 1008/3 1008/4 1011/19 1018/13 1022/15 1022/16 1022/17 1024/25 1032/1 1033/18 1034/4 1044/18 1044/18</p>	<p>1047/13 1047/19 1047/20 1047/21 1048/9 1048/9 1048/9 1048/10 1051/5 1057/11 1067/25 1069/2 1070/1 1070/18 1072/18 1077/18 1081/21 1081/23 1081/24 1083/2 1083/3 1083/5 1083/5 anybody [2] 1021/3 1033/24 anyone [6] 983/6 1022/13 1027/12 1032/25 1034/4 1083/4 anything [18] 969/4 972/20 989/3 992/11 992/12 1004/18 1011/8 1011/10 1018/12 1023/2 1023/2 1047/20 1051/9 1068/11 1070/21 1081/22 1083/14 1083/22 anyway [4] 967/22 970/2 999/8 1053/1 anywhere [2] 1008/5 1056/18 apart [3] 971/9 980/8 1021/13 apologize [1] 978/9 appears [1] 1034/12 applied [2] 1039/5 1039/15 apply [1] 971/2 applying [1] 985/5 appreciate [1] 999/5 approach [13] 969/19 994/9 995/5 1008/13 1008/16 1032/18 1044/1 1044/8 1044/10 1044/22 1045/10 1059/11 1067/14 approached [2] 1032/22 1067/16 approaches [3] 1021/2 1023/19 1026/4 appropriate [4] 1045/12 1046/6 1067/24 1077/22 approximately [9] 986/6 986/11 986/13 1011/5 1029/19 1056/12 1061/5 1062/3 1074/9 April [4] 1043/3 1043/13 1043/22 1048/12 April 18th [1] 1043/22 April 1973 [1] 1043/13 arbitrarily [1] 1020/3 are [101] 964/8 964/9 964/20 965/14 965/20 965/22 966/17 969/7 970/12 972/9 972/21 972/23 974/12 974/18 977/7 979/20 980/13 981/6 982/11 984/4 995/1 996/3 996/3 996/4 997/25 998/19</p>
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<p>A</p> <p>are... [75] 1000/2 1001/14 1005/3 1005/13 1005/15 1005/15 1007/16 1010/7 1010/16 1010/22 1011/18 1011/19 1011/20 1015/16 1016/7 1018/7 1018/15 1018/21 1022/20 1024/5 1025/1 1025/2 1025/3 1025/22 1026/2 1026/14 1026/15 1026/25 1030/3 1033/6 1035/8 1035/13 1035/14 1036/25 1039/2 1039/5 1039/12 1039/15 1039/15 1039/19 1041/8 1041/15 1044/6 1047/20 1048/4 1048/5 1048/7 1049/4 1049/20 1050/6 1053/20 1055/6 1057/2 1057/7 1057/17 1057/23 1057/25 1058/18 1059/17 1059/18 1061/8 1061/12 1062/15 1062/15 1062/16 1066/3 1067/10 1071/22 1072/19 1073/9 1075/6 1075/7 1080/11 1081/20 1083/10</p> <p>area [10] 985/1 985/1 995/23 998/2 1016/17 1017/15 1050/13 1063/17 1064/17 1072/5</p> <p>areas [2] 1001/13 1039/20</p> <p>aren't [4] 966/7 966/10 1016/9 1059/8</p> <p>arguing [1] 1044/13</p> <p>argument [6] 972/2 990/6 1008/10 1032/17 1038/4 1044/13</p> <p>argumentative [2] 1027/23 1047/17</p> <p>arms [1] 1072/6</p> <p>around [8] 975/20 985/1 989/6 996/17 1030/16 1036/8 1064/23 1072/20</p> <p>arrows [1] 1003/23</p> <p>art [2] 1012/6 1026/6</p> <p>article [4] 1032/5 1032/6 1032/6 1033/15</p> <p>as [105] 964/13 966/13 970/11 974/11 974/23 978/16 979/11 980/1 981/18 982/11 982/21 983/19 983/22 987/9 987/10 987/14 988/16 989/12 989/18 990/8 992/2 992/2 992/9 993/11 993/12 993/13 993/19 1000/7 1000/7</p>	<p>1004/12 1005/1 1006/11 1009/19 1009/19 1009/24 1009/24 1010/7 1010/12 1011/13 1013/23 1015/20 1016/11 1017/1 1018/4 1018/4 1018/14 1018/14 1019/13 1020/3 1026/4 1026/19 1027/19 1027/21 1028/6 1028/6 1028/9 1028/24 1028/24 1029/1 1029/1 1029/5 1033/3 1033/14 1034/4 1034/6 1035/13 1037/25 1038/23 1039/1 1040/13 1040/13 1041/22 1042/13 1044/1 1046/20 1046/21 1046/24 1047/25 1048/5 1054/9 1057/1 1057/2 1058/17 1058/19 1058/19 1059/10 1059/10 1059/11 1061/15 1061/24 1062/12 1067/20 1070/17 1073/3 1073/4 1073/6 1075/19 1076/8 1080/18 1080/19 1081/10 1081/11 1081/12 1081/13 1082/8</p> <p>asbestiform [6] 981/20 1031/23 1032/1 1035/3 1035/4 1044/2</p> <p>asbestos [205]</p> <p>asbestos-containing [2] 1066/4 1073/3</p> <p>asbestos-free [4] 1004/13 1061/21 1062/12 1080/11</p> <p>ashes [1] 1017/21</p> <p>Ashton [5] 4/10 1037/13 1043/18 1043/18 1043/21</p> <p>aside [3] 993/1 1023/19 1078/2</p> <p>ask [19] 964/23 967/7 968/7 969/14 969/20 970/2 970/16 971/8 987/24 994/1 1014/15 1023/21 1044/13 1068/10 1068/13 1069/4 1077/25 1078/18 1078/19</p> <p>asked [12] 964/8 964/10 968/13 969/2 969/3 993/7 994/17 1032/24 1041/19 1068/7 1078/1 1078/9</p> <p>asking [4] 1002/7 1025/12 1034/14 1068/8</p> <p>aspect [1] 1048/15</p> <p>assay [6] 1039/4 1039/7 1039/8 1039/9</p>	<p>1039/10 1039/14 assessment [1] 1075/4 association [1] 1065/16</p> <p>assume [2] 978/16 1005/21</p> <p>atoms [2] 996/9 1055/20</p> <p>attach [1] 1036/6</p> <p>attached [3] 1033/5 1033/13 1037/17</p> <p>attention [1] 1046/16</p> <p>audits [1] 1024/1</p> <p>automatically [1] 969/21</p> <p>available [1] 1037/21</p> <p>average [3] 1026/22 1075/1 1077/5</p> <p>aware [2] 1038/24 1039/25</p> <p>away [5] 985/2 986/2 1004/19 1017/19 1017/19</p> <p>B</p> <p>babies [1] 1050/7</p> <p>baby [34] 970/22 971/4 972/5 977/20 981/9 982/24 983/9 983/17 985/22 985/24 1005/14 1006/1 1037/16 1043/13 1043/15 1044/1 1046/17 1046/20 1047/8 1047/25 1048/9 1050/10 1050/21 1061/25 1062/23 1063/4 1068/24 1069/1 1076/20 1076/21 1077/2 1078/10 1078/11 1078/20</p> <p>back [42] 965/8 970/15 971/23 973/6 974/7 975/1 976/6 978/18 979/25 985/2 992/23 993/3 993/10 993/17 995/15 995/18 1000/15 1000/20 1000/21 1006/20 1007/3 1014/5 1023/10 1026/7 1032/12 1032/15 1037/3 1040/7 1040/10 1041/1 1041/12 1043/2 1048/12 1061/7 1065/20 1073/24 1075/16 1077/21 1079/21 1080/15 1080/25 1083/25</p> <p>background [3] 1020/9 1020/12 1071/9</p> <p>backyard [2] 1064/12 1064/12</p> <p>BACON [1] 2/23</p> <p>bacteria [2] 991/23 992/10</p> <p>bad [5] 1002/24 1008/8 1019/10 1035/5 1058/9</p> <p>Bain [4] 1007/4 1007/4 1007/6 1007/11</p>	<p>bale [3] 1016/1 1029/7 1029/9</p> <p>ban [1] 1047/11</p> <p>banning [1] 1047/14</p> <p>Barnard [1] 2/16</p> <p>based [9] 983/5 986/19 987/6 988/19 1059/5 1060/21 1060/25 1062/2 1073/11</p> <p>basically [4] 974/15 982/17 1008/19 1045/18</p> <p>basis [2] 968/6 1069/8</p> <p>basketball [3] 1064/20 1064/21 1064/24</p> <p>Bates [3] 1032/11 1033/6 1033/13</p> <p>bathroom [13] 1009/13 1009/15 1009/17 1009/25 1010/6 1010/25 1011/14 1012/4 1012/20 1013/2 1013/3 1027/5 1051/17</p> <p>Bauer [1] 2/21</p> <p>be [141]</p> <p>beam [9] 996/1 998/1 998/16 998/23 1003/10 1003/19 1003/22 1004/1 1004/7</p> <p>beans [1] 997/2</p> <p>because [66] 964/16 965/18 969/2 969/14 969/20 969/22 971/7 971/13 980/21 981/19 985/19 986/22 989/1 996/1 996/4 996/6 996/8 998/17 998/18 998/22 1002/12 1003/20 1004/2 1004/2 1011/8 1011/13 1012/12 1013/15 1017/6 1017/13 1020/3 1020/9 1020/19 1020/20 1021/5 1024/1 1025/20 1025/21 1027/3 1029/16 1030/18 1034/6 1034/12 1038/7 1042/20 1049/10 1050/16 1050/24 1051/20 1052/18 1053/16 1053/19 1057/3 1057/15 1059/19 1059/20 1062/4 1064/16 1070/9 1072/14 1073/19 1075/23 1076/11 1080/12 1080/14 1081/23</p> <p>become [1] 996/9</p> <p>becomes [1] 1058/24</p> <p>been [35] 965/17 966/5 968/13 973/14 993/3 993/11 1002/11 1008/3 1008/4 1014/20 1030/15 1032/8 1033/17 1033/21 1033/22 1033/23 1034/17 1036/3 1036/8</p>	<p>1038/1 1041/19 1044/18 1045/1 1045/3 1046/23 1047/13 1053/1 1060/1 1063/4 1065/10 1065/11 1065/15 1069/9 1075/23 1079/2</p> <p>before [34] 965/11 968/14 968/24 971/18 977/4 989/9 1019/12 1019/24 1023/2 1023/20 1026/1 1034/4 1034/17 1037/4 1037/11 1041/14 1041/16 1049/12 1049/12 1050/11 1051/1 1051/14 1057/10 1060/18 1061/11 1065/22 1067/3 1069/17 1073/22 1073/23 1077/20 1080/8 1081/9 1083/24</p> <p>begin [1] 992/13</p> <p>behalf [2] 973/16 1023/12</p> <p>behave [1] 1076/13</p> <p>behind [4] 995/20 997/15 997/19 1055/18</p> <p>being [13] 965/19 974/16 978/3 979/15 989/20 998/3 1011/9 1015/20 1019/13 1028/9 1033/3 1038/23 1046/24</p> <p>believe [19] 978/21 980/24 984/2 988/12 992/16 992/19 994/17 995/5 999/11 999/20 1029/21 1032/7 1040/1 1043/19 1044/3 1046/4 1054/2 1074/10 1077/6</p> <p>belong [1] 1032/5</p> <p>below [12] 970/20 970/23 984/17 989/10 1027/1 1035/14 1042/22 1052/19 1061/16 1069/7 1069/15 1081/3</p> <p>belt [3] 991/5 991/5 991/7</p> <p>bench [3] 1032/22 1067/16 1081/12</p> <p>benefit [2] 965/6 982/20</p> <p>best [6] 1005/11 1012/8 1017/4 1017/6 1036/11 1059/1</p> <p>Beth [1] 2/21</p> <p>better [10] 999/4 999/5 1009/17 1017/18 1017/23 1027/16 1040/13 1063/9 1063/10 1082/3</p> <p>between [3] 1056/7 1065/17 1071/23</p> <p>beyond [7] 967/16 976/9 977/12 993/6 1024/1 1024/3 1078/15</p>
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<p>B</p> <p>Bicks [19] 2/14 977/5 990/22 991/2 991/15 992/21 1005/5 1008/2 1020/24 1023/21 1023/25 1040/17 1042/11 1044/10 1048/8 1065/15 1073/8 1078/25 1079/8</p> <p>Bicks' [3] 983/2 1015/19 1023/23</p> <p>bidders [1] 1037/21</p> <p>big [13] 969/25 1013/25 1014/20 1021/12 1029/12 1041/17 1049/15 1054/19 1054/23 1057/12 1057/22 1062/7 1071/25</p> <p>bigger [1] 980/18</p> <p>biggest [1] 1049/16</p> <p>bill [5] 4/10 976/18 1043/18 1043/18 1043/21</p> <p>billion [3] 988/7 988/8 988/18</p> <p>bills [1] 976/24</p> <p>bit [13] 974/18 976/16 980/18 980/21 1014/6 1017/24 1017/25 1030/23 1031/19 1035/10 1048/18 1064/22 1076/3</p> <p>bitter [1] 1029/3</p> <p>black [2] 984/25 1018/18</p> <p>blanks [1] 1020/18</p> <p>blind [2] 1017/1 1019/25</p> <p>blindfolded [1] 1025/18</p> <p>Blount [12] 977/11 993/1 1031/12 1034/18 1037/4 1037/12 1041/16 1041/25 1042/4 1045/16 1059/11 1078/1</p> <p>Blount's [7] 4/7 1013/22 1031/5 1031/12 1033/5 1078/7 1079/6</p> <p>blue [1] 1003/23</p> <p>Blvd [1] 2/6</p> <p>body [2] 989/5 1073/6</p> <p>bolster [1] 968/10</p> <p>Bombarded [1] 1008/23</p> <p>both [5] 966/15 969/7 988/2 1050/4 1062/22</p> <p>bottle [30] 4/13 971/16 985/22 986/7 986/15 986/16 986/25 987/7 987/8 987/12 987/18 987/22 987/23 987/25 988/2 988/3 988/6 988/10 988/12 988/14 988/19 988/21 1063/1 1069/16 1070/3 1072/9</p>	<p>1072/17 1079/22 1082/1 1082/2</p> <p>bottles [6] 1078/22 1078/23 1080/1 1080/1 1081/19 1082/12</p> <p>bottling [1] 1046/12</p> <p>bottom [11] 991/6 1018/2 1018/15 1029/10 1029/13 1029/15 1030/4 1030/20 1030/22 1032/12 1035/23</p> <p>bought [1] 994/22</p> <p>Boulevard [1] 2/24</p> <p>Bouquet [2] 1076/5 1076/12</p> <p>bowl [1] 1057/21</p> <p>boxes [1] 964/9</p> <p>brain [2] 1028/9 1028/17</p> <p>brake [1] 1072/15</p> <p>break [7] 980/8 996/5 1011/25 1022/1 1022/4 1077/20 1082/15</p> <p>breaking [1] 1081/9</p> <p>breaks [1] 1021/25</p> <p>breath [1] 1072/25</p> <p>breathe [1] 1071/12</p> <p>breathed [1] 1073/15</p> <p>breather [1] 984/22</p> <p>breathing [2] 1072/23 1073/1</p> <p>bridge [1] 970/3</p> <p>brief [2] 976/4 994/1</p> <p>bring [7] 973/1 977/6 984/14 998/4 999/17 1015/25 1041/19</p> <p>bringing [2] 965/8 969/25</p> <p>Broadway [1] 2/21</p> <p>BROOM [1] 2/20</p> <p>Broughton [1] 1006/19</p> <p>bubbles [1] 1036/6</p> <p>bucket [1] 1073/5</p> <p>building [3] 1021/8 1026/15 1027/17</p> <p>bunch [5] 976/23 995/19 1017/15 1019/24 1049/14</p> <p>bundle [14] 979/13 979/15 980/2 980/3 980/5 980/12 981/2 981/19 982/2 982/6 1000/7 1000/16 1010/14 1050/24</p> <p>bundles [16] 979/1 979/21 979/23 980/7 980/8 985/21 985/23 986/14 987/8 988/17 997/16 1005/18 1013/25 1021/12 1035/7 1050/23</p> <p>Burlison [1] 1/2</p> <p>burn [2] 1017/19 1017/19</p> <p>burned [1] 1017/21</p> <p>Bush [1] 2/18</p> <p>business [4] 1033/18 1033/24 1034/6 1034/7</p>	<p>buy [2] 987/22 1079/2 buying [1] 987/21 bypass [1] 975/24</p> <p>C</p> <p>cable [1] 975/23</p> <p>cables [1] 975/19</p> <p>cabling [1] 979/24</p> <p>calculate [2] 999/12 1075/8</p> <p>calculation [4] 1060/21 1069/14 1070/10 1070/13</p> <p>calculations [18] 1053/25 1062/2 1065/11 1066/6 1066/7 1066/10 1067/5 1067/9 1067/10 1067/19 1067/25 1068/15 1068/22 1069/11 1070/17 1071/15 1071/16 1077/18</p> <p>calendar [1] 991/10</p> <p>calibrate [1] 1054/20</p> <p>call [34] 979/20 983/16 986/23 987/24 995/7 1000/1 1000/13 1002/3 1003/7 1008/16 1009/4 1010/1 1010/12 1015/3 1015/3 1016/10 1016/11 1019/12 1019/16 1019/23 1021/21 1022/6 1030/6 1030/10 1031/2 1035/9 1049/17 1065/25 1075/3 1075/3 1075/4 1075/17 1081/1 1082/22</p> <p>called [11] 980/11 981/18 995/22 999/13 1002/1 1016/23 1023/20 1024/3 1028/4 1051/2 1065/16</p> <p>calling [2] 974/2 974/4</p> <p>calls [1] 1015/6</p> <p>calorimeter [1] 1025/5</p> <p>came [6] 977/1 981/8 1079/9 1079/11 1079/14 1079/20</p> <p>can [142]</p> <p>can't [31] 969/17 970/2 975/17 998/4 998/19 998/24 1002/6 1007/6 1008/4 1009/2 1009/3 1017/12 1024/12 1025/21 1044/24 1044/24 1047/21 1051/6 1051/10 1051/11 1053/13 1053/13 1055/13 1055/14 1057/7 1057/17 1057/18 1059/19 1059/19 1059/22 1081/3</p> <p>cancer [8] 969/13 969/22 969/23 969/24 983/6 1065/16 1065/17 1073/9</p> <p>cannot [2] 1052/18</p>	<p>1089/13</p> <p>cans [1] 984/25</p> <p>carbon [3] 1055/16 1055/18 1055/21</p> <p>careful [3] 969/8 1002/8 1005/10</p> <p>carnival [1] 1030/15</p> <p>case [25] 965/16 966/6 976/4 977/17 981/2 982/12 986/19 986/22 988/15 1022/11 1022/12 1022/15 1022/16 1022/18 1030/9 1034/5 1035/22 1068/3 1070/2 1071/4 1075/15 1075/17 1083/1 1083/5 1085/6</p> <p>cases [1] 966/5</p> <p>Cashmere [2] 1076/5 1076/12</p> <p>category [1] 1073/11</p> <p>caught [1] 978/18</p> <p>causal [1] 1065/16</p> <p>causation [3] 970/9 970/12 970/14</p> <p>cause [5] 1/7 970/14 1008/24 1065/15 1085/8</p> <p>causes [1] 996/7</p> <p>causing [3] 998/8 998/24 1073/9</p> <p>cc [3] 1074/22 1074/23 1074/24</p> <p>CC10417 [2] 1/7 1085/8</p> <p>CCR [2] 1/23 1085/16</p> <p>cement [1] 1066/4</p> <p>Center [1] 975/14</p> <p>centimeter [7] 1029/19 1029/21 1030/9 1030/10 1030/12 1030/14 1052/9</p> <p>centimeters [1] 1030/2</p> <p>centrifuge [2] 1030/15 1030/19</p> <p>certain [6] 975/25 1016/21 1024/21 1051/1 1061/3 1074/4</p> <p>certainly [3] 965/24 1021/16 1072/23</p> <p>Certificate [2] 3/8 1085/1</p> <p>certification [1] 1007/13</p> <p>certified [2] 1025/4 1085/3</p> <p>certify [3] 1051/5 1085/3 1085/9</p> <p>chad [1] 1056/25</p> <p>chain [1] 981/15</p> <p>chance [5] 970/24 974/19 978/22 990/3 1080/9</p> <p>Chances [1] 1039/19</p> <p>change [8] 998/25 999/16 1004/10 1013/19 1014/3 1025/9 1035/10 1040/14</p> <p>changed [4] 976/18</p>	<p>976/19 980/22 1077/3</p> <p>changes [5] 998/8 998/9 1013/24 1024/9 1024/19</p> <p>changing [5] 1004/4 1013/20 1072/11 1077/1 1077/2</p> <p>characterize [2] 976/21 991/24</p> <p>characterizing [1] 993/19</p> <p>chart [3] 4/13 990/21 1081/18</p> <p>chase [1] 1078/4</p> <p>cheaper [1] 987/22</p> <p>check [3] 1017/2 1053/21 1077/9</p> <p>checked [1] 978/19</p> <p>chemicals [1] 1030/7</p> <p>chemist [1] 1051/3</p> <p>chemistry [2] 997/23 1080/17</p> <p>chewing [2] 983/22 989/4</p> <p>chiquita [1] 987/18</p> <p>choose [1] 990/10</p> <p>chrysotile [4] 1080/14 1080/15 1080/16 1081/7</p> <p>cigarette [2] 1074/18 1074/19</p> <p>cigarettes [2] 969/22 1074/17</p> <p>circle [2] 1049/17 1063/21</p> <p>CIRCUIT [4] 1/1 1/24 1/24 1085/4</p> <p>Cirsch [1] 2/8</p> <p>CITY [4] 1/1 1/24 2/24 1085/5</p> <p>claims [2] 1039/3 1039/13</p> <p>class [2] 999/14 999/25</p> <p>classifiable [1] 1047/25</p> <p>classified [2] 975/18 1048/5</p> <p>clean [12] 997/4 1020/16 1020/22 1020/22 1044/1 1044/3 1044/7 1044/10 1044/11 1044/15 1044/22 1050/15</p> <p>cleaning [2] 1012/12 1020/13</p> <p>clear [4] 968/19 986/18 1050/4 1073/9</p> <p>clearly [2] 1034/5 1065/18</p> <p>clerk [1] 973/14</p> <p>client [1] 1079/20</p> <p>clients [1] 973/20</p> <p>Clip [1] 1011/11</p> <p>clips [2] 982/23 1011/20</p> <p>close [4] 973/24 1057/13 1075/6 1080/15</p>
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<p>C closely [2] 982/3 984/25 clue [1] 1028/16 co [1] 967/5 co-conspirator [1] 967/5 collect [5] 1017/17 1040/15 1040/15 1055/6 1055/10 collected [4] 985/8 1055/7 1055/8 1055/9 collecting [1] 985/7 color [2] 991/23 992/9 colors [4] 996/6 1013/21 1013/21 1014/3 come [22] 966/18 967/12 973/11 981/7 988/18 993/15 996/6 996/22 997/1 997/6 1000/19 1000/21 1003/4 1014/5 1053/17 1055/7 1059/6 1060/14 1060/19 1065/5 1073/24 1077/21 comes [5] 991/4 996/5 1003/12 1022/18 1083/6 coming [8] 964/9 976/17 996/1 998/16 1003/10 1003/22 1004/7 1013/12 comments [1] 994/16 commercial [1] 993/14 common [7] 999/25 999/25 1020/16 1020/17 1040/10 1040/12 1077/16 commonly [1] 1027/10 communicate [1] 1022/16 communications [1] 1046/21 communities [1] 1051/6 community [1] 1027/25 companies [2] 2/12 1007/8 company [24] 977/13 995/14 1000/10 1007/17 1012/3 1012/20 1012/21 1013/1 1014/4 1014/6 1015/20 1016/5 1018/20 1018/21 1037/17 1043/3 1044/21 1044/23 1044/24 1048/19 1048/21 1053/22 1061/25 1062/12 company's [1] 1011/22 compared [4] 1005/20 1016/11 1058/17 1067/12 completely [2] 983/11 1057/7</p>	<p>compound [2] 1066/5 1073/3 computing [1] 1074/2 concentrate [17] 1016/14 1017/1 1018/1 1028/10 1028/11 1028/13 1028/19 1029/1 1029/5 1029/5 1030/22 1042/20 1057/19 1058/2 1058/13 1063/11 1064/13 concentrated [9] 1004/3 1018/10 1028/5 1035/22 1036/1 1042/2 1045/19 1046/21 1056/24 concentrating [6] 1021/22 1030/25 1041/21 1045/12 1046/6 1059/9 concentration [41] 967/1 985/20 985/20 986/12 986/21 986/24 987/6 987/16 988/3 988/5 988/15 1005/19 1005/20 1015/7 1015/13 1016/21 1016/23 1017/8 1018/18 1019/7 1021/19 1025/25 1028/4 1034/17 1038/14 1038/20 1039/17 1043/11 1045/6 1045/24 1049/11 1049/11 1049/13 1049/24 1050/20 1051/1 1056/20 1061/4 1069/16 1076/2 1080/7 concentrations [5] 985/13 986/25 1005/24 1015/15 1021/6 concept [3] 967/7 999/15 1028/17 concepts [7] 967/11 967/18 967/19 967/25 968/3 994/17 1006/14 concern [1] 1043/23 conclusion [3] 1043/25 1060/2 1060/14 conclusions [1] 1083/3 conditions [2] 998/25 999/17 conductor [1] 979/24 confident [1] 1044/6 confirm [2] 1043/14 1071/18 consider [2] 1036/12 1040/25 considerable [1] 1043/23 considering [3] 1005/3 1041/21 1080/6 conspirator [1] 967/5 construction [4] 1021/7 1026/14</p>	<p>1026/23 1065/25 consulting [1] 990/15 CONSUMER [1] 2/12 contact [1] 1083/8 contain [5] 981/9 992/24 1035/16 1047/23 1085/10 container [7] 985/16 985/18 1050/12 1050/22 1050/25 1053/12 1073/6 containers [5] 985/14 1075/18 1075/19 1075/20 1078/24 containing [3] 1019/24 1066/4 1073/3 contains [1] 1047/25 contamination [1] 1020/6 content [9] 1006/25 1007/24 1008/13 1016/11 1031/6 1031/24 1035/4 1035/13 1075/15 context [3] 999/23 999/24 1039/24 continue [6] 981/21 1005/1 1034/25 1046/14 1049/2 1071/2 continued [4] 3/7 973/15 994/22 1023/17 continues [3] 1038/16 1039/1 1063/3 control [2] 975/14 1010/19 controversy [1] 1044/2 conveyer [3] 991/5 991/5 991/7 cooked [1] 983/25 Cooper [3] 2/9 1050/3 1082/3 copper [1] 979/24 copy [6] 978/6 990/24 1031/11 1033/5 1037/17 1081/11 cork [1] 1030/3 corner [2] 1016/13 1033/6 corporate [1] 1004/16 correct [19] 970/8 982/25 984/19 985/15 987/13 987/19 1010/7 1010/8 1011/21 1015/22 1021/23 1028/8 1037/6 1041/15 1050/10 1050/11 1067/10 1076/6 1079/3 correctly [2] 986/8 988/13 cosmetic [8] 1021/10 1031/6 1031/23 1035/3 1047/8 1047/9 1076/1 1076/9 cosmetic-grade [1] 1031/23 could [28] 964/23 965/18 969/19 975/24 980/1 980/4 987/3 987/9 996/16 1006/24</p>	<p>1007/23 1029/10 1029/14 1033/17 1033/23 1044/7 1045/21 1047/22 1060/15 1062/18 1063/19 1064/4 1068/10 1070/3 1075/15 1080/17 1081/10 1083/23 couldn't [1] 1018/19 counsel [5] 973/1 973/20 1032/22 1067/16 1081/11 count [5] 971/10 971/16 1057/24 1058/7 1081/24 counted [1] 1007/16 counting [1] 1000/7 country [2] 993/15 1025/4 counts [3] 970/18 970/20 972/6 couple [1] 975/13 course [3] 1034/5 1034/7 1053/7 court [25] 1/1 1/23 1/24 3/8 964/4 973/4 973/19 973/23 990/25 994/19 1016/1 1022/22 1023/6 1023/9 1023/15 1033/8 1034/23 1070/24 1082/25 1083/12 1084/3 1084/5 1085/3 1085/4 1085/4 courtroom [3] 965/1 1015/25 1076/7 cover [4] 973/23 974/3 1048/16 1063/17 covered [5] 971/23 972/2 1043/22 1048/17 1057/8 covers [1] 1017/13 create [1] 991/5 criteria [1] 1000/8 criticizing [1] 1026/2 crocidolite [1] 1065/20 Crompton [1] 2/5 cross [9] 965/4 965/7 969/25 970/3 970/24 971/6 1069/23 1070/19 1083/22 cross-examination [2] 965/4 1069/23 cross-examine [3] 965/7 970/24 1070/19 crush [1] 983/10 crust [1] 1000/1 crystal [6] 996/9 996/12 998/8 1013/19 1013/21 1024/10 crystalline [5] 996/4 996/7 998/7 1008/23 1025/8 crystallizes [1] 1024/20 crystals [2] 998/23 1013/9 cube [3] 1029/18 1029/18 1029/18</p>	<p>cubed [1] 1029/19 cubic [7] 1029/21 1030/2 1030/9 1030/10 1030/12 1030/13 1080/15 cumulative [1] 1075/4 cup [3] 1018/9 1018/10 1018/10 current [2] 1044/2 1047/22 currently [1] 1037/21 custodian [1] 1033/9 custody [1] 981/15 cut [2] 1058/14 1078/4 CV [1] 974/22</p> <hr/> <p>D dash [1] 1034/13 data [6] 4/5 989/14 989/18 1007/17 1070/12 1070/13 date [2] 1033/11 1034/3 day [21] 973/12 976/1 976/2 976/6 976/7 982/21 983/3 991/9 991/11 991/18 991/20 992/1 1010/21 1026/18 1072/5 1072/10 1072/10 1072/17 1074/17 1074/22 1074/23 days [1] 1063/19 dead [1] 1009/23 deal [4] 976/21 980/15 1005/19 1026/16 dealing [15] 1011/13 1013/9 1017/11 1019/22 1019/23 1021/6 1021/10 1021/11 1021/12 1027/17 1032/2 1035/7 1037/1 1058/20 1080/8 decide [4] 1008/16 1010/22 1022/12 1083/1 decision [1] 1022/3 decisions [1] 1083/3 deem [1] 975/1 defendant [3] 2/12 965/23 1085/8 Defendant's [1] 3/4 Defendants [1] 1/9 define [2] 999/22 1005/17 definition [1] 981/19 degrees [1] 1014/2 demonstrative [16] 4/4 4/5 4/11 4/12 4/13 970/18 971/8 978/3 978/6 989/20 1054/7 1054/10 1059/25 1060/5 1081/10 1081/13 denied [1] 971/20 densities [1] 1040/13 density [9] 1029/20 1035/12 1035/20 1036/2 1040/9 1080/13</p>
--	---	--	--	---

<p>D density... [3] 1080/19 1080/19 1080/21 density-optical [2] 1035/12 1035/20 Deodorant [1] 984/3 depending [4] 971/2 982/6 987/16 1056/18 depends [4] 968/17 986/25 1064/10 1074/15 depose [1] 1070/9 deposed [2] 1068/1 1071/19 deposition [24] 965/17 965/19 966/14 968/2 970/25 1031/13 1031/13 1031/18 1067/20 1067/22 1068/4 1068/6 1068/10 1068/17 1068/21 1069/20 1069/21 1070/19 1071/4 1071/14 1077/13 1078/7 1078/8 1078/14 depositions [1] 966/6 deposits [1] 992/24 deputy [1] 973/14 describe [1] 1035/20 described [1] 979/8 describing [2] 1002/9 1023/24 designated [1] 982/5 designed [2] 1011/15 1053/15 detail [2] 974/20 984/21 detect [2] 1051/1 1053/2 detected [2] 1061/17 1062/13 detection [3] 1061/16 1062/4 1081/3 detective [1] 1019/16 determination [2] 1037/23 1038/3 determine [6] 996/11 1008/25 1014/16 1065/9 1067/8 1075/5 determined [1] 1066/13 determining [2] 985/10 1074/7 developed [1] 980/1 developing [1] 998/20 device [2] 975/20 1044/1 diameter [1] 1064/23 diaper [3] 1072/11 1077/2 1077/3 did [80] 965/24 970/19 970/23 971/9 971/19 972/2 975/15 975/17 976/15 976/23 978/16 978/17 981/7 983/20 984/17 984/21 985/16 985/17 986/19 989/13 990/17 990/23 991/23</p>	<p>993/17 1004/17 1012/3 1015/25 1015/25 1016/5 1021/2 1024/1 1025/16 1031/2 1031/19 1035/21 1036/11 1037/4 1038/11 1038/21 1039/17 1040/5 1041/25 1042/4 1045/18 1046/6 1046/7 1048/1 1052/5 1052/6 1052/25 1053/3 1055/21 1060/21 1065/9 1068/22 1068/23 1069/7 1069/8 1069/10 1069/15 1070/10 1071/15 1071/17 1074/2 1074/4 1075/9 1075/11 1075/24 1076/19 1076/25 1077/16 1077/18 1078/8 1078/11 1078/19 1079/17 1079/22 1079/24 1079/25 1082/11 didn't [25] 964/16 970/11 993/15 996/14 1012/3 1018/17 1025/14 1025/15 1032/4 1039/11 1047/19 1051/5 1051/8 1053/1 1053/2 1067/19 1068/25 1075/25 1076/6 1079/8 1079/9 1081/21 1081/21 1081/25 1083/21 difference [5] 1007/20 1047/15 1071/23 1071/25 1076/15 different [42] 966/21 967/9 975/7 977/13 977/14 980/14 981/23 982/23 983/12 985/13 985/14 991/12 991/25 995/4 998/2 1002/19 1005/2 1006/23 1007/22 1008/23 1013/11 1014/24 1021/2 1024/18 1027/24 1028/10 1034/12 1040/12 1048/10 1055/7 1055/10 1061/18 1063/3 1069/11 1070/15 1072/6 1072/12 1075/9 1076/13 1078/3 1078/24 1081/19 differential [4] 1024/4 1024/5 1024/8 1025/5 differently [2] 1027/12 1048/24 difficult [1] 1059/14 diffract [1] 998/8 diffracted [1] 998/24 diffraction [34] 967/10 995/6 995/16 995/17 995/22 995/23 996/11</p>	<p>997/11 997/21 998/3 998/1 998/3 999/9 999/12 999/20 1000/11 1000/17 1001/20 1001/23 1001/25 1002/17 1003/3 1003/11 1003/15 1004/11 1004/21 1008/20 1008/20 1008/24 1009/9 1009/10 1012/13 1025/2 1026/3 dig [1] 1015/17 digging [1] 991/25 dilute [6] 1017/13 1017/14 1057/9 1058/3 1059/15 1059/21 dimensions [1] 1001/17 dire [1] 970/6 Direct [3] 3/7 973/15 1023/17 direction [3] 1013/18 1013/19 1013/20 directions [4] 996/8 998/9 998/9 1013/11 discuss [4] 974/15 990/19 1022/12 1022/13 discussed [5] 974/17 975/6 1006/9 1039/18 1083/1 discussion [1] 1036/22 disease [3] 970/5 970/14 975/14 displayed [2] 968/5 974/23 displaying [1] 978/24 dissolve [1] 1055/17 distance [2] 980/24 1054/21 distances [1] 1054/21 distribution [1] 1035/17 disturbing [3] 1037/17 1037/20 1038/7 diverse [2] 975/9 976/12 divide [3] 980/19 987/9 987/15 division [5] 1047/5 1047/6 1047/8 1047/9 1047/10 Diwan [1] 2/17 do [185] doctor [8] 966/22 967/3 967/7 970/3 970/4 1022/6 1022/23 1065/4 document [19] 4/10 966/20 967/1 967/4 969/1 969/1 994/2 1006/6 1006/8 1006/13 1006/20 1033/8 1033/17 1037/1 1038/25 1039/24 1042/14 1043/19 1046/14 documents [26] 964/7</p>	<p>964/8 964/17 964/18 964/21 965/3 965/6 965/11 965/13 965/17 965/22 966/2 966/7 966/8 966/9 966/10 966/13 966/18 966/20 968/5 968/6 968/9 968/24 972/12 1044/25 1059/13 does [32] 967/3 969/21 969/23 969/23 988/23 992/10 992/10 995/24 1000/14 1005/9 1013/3 1014/4 1014/6 1018/20 1025/6 1025/8 1031/24 1032/5 1033/17 1039/7 1042/20 1048/21 1050/17 1051/14 1051/16 1052/16 1053/6 1055/23 1074/18 1076/12 1077/8 1080/11 doesn't [15] 989/7 992/18 1005/9 1008/5 1010/1 1011/8 1013/2 1027/8 1029/1 1033/24 1051/20 1052/3 1052/15 1053/5 1076/15 doing [25] 967/16 972/21 975/19 975/23 990/21 993/25 995/1 1002/6 1003/13 1004/15 1004/18 1013/23 1016/15 1027/12 1030/5 1042/7 1050/7 1056/14 1056/18 1057/15 1058/15 1063/8 1074/13 1076/10 1076/24 doll [1] 1077/3 dollar [2] 976/18 976/24 don't [71] 968/4 969/19 969/25 970/13 971/6 971/14 971/22 972/12 976/13 983/7 984/2 984/12 985/24 986/1 986/21 989/7 992/16 992/17 992/19 994/14 997/1 997/3 1000/25 1003/12 1004/9 1005/8 1006/12 1015/18 1016/14 1017/8 1017/19 1018/6 1018/22 1020/8 1021/25 1028/25 1030/17 1032/7 1032/16 1033/3 1039/8 1045/3 1048/24 1049/11 1049/24 1057/11 1058/1 1058/12 1058/13 1059/15 1059/21 1060/3 1063/11 1066/16 1066/16 1067/18 1072/3 1074/12 1075/3</p>	<p>967/18 1079/13 1079/13 1080/6 1080/22 1081/20 1081/23 1081/23 1083/3 1083/4 1083/5 1083/19 Donald [1] 2/15 done [39] 966/24 966/25 973/24 975/8 975/8 975/12 976/8 976/9 982/12 987/18 990/4 991/10 992/1 992/14 993/11 993/24 1003/23 1013/3 1014/16 1018/21 1027/10 1036/3 1036/5 1040/11 1045/21 1048/18 1053/21 1053/22 1053/25 1063/13 1064/8 1066/14 1067/3 1067/5 1071/24 1076/20 1077/7 1078/14 1082/7 donkey [2] 1025/13 1025/18 dose [9] 1067/19 1068/15 1068/22 1069/2 1069/5 1069/11 1069/14 1075/3 1075/4 dots [4] 995/19 998/6 998/21 999/10 doubles [1] 1010/19 Dowd [1] 2/5 down [35] 973/2 979/6 982/15 988/4 988/16 989/25 995/12 996/1 997/6 998/18 999/8 1000/1 1001/5 1001/17 1001/22 1002/12 1002/12 1003/10 1003/22 1004/7 1017/6 1022/24 1030/17 1052/10 1053/16 1055/1 1055/15 1055/17 1056/1 1058/14 1063/3 1075/16 1078/11 1078/13 1080/24 Dr [49] 4/4 4/5 4/7 4/12 964/19 964/22 965/1 965/5 965/25 971/19 973/8 973/22 996/21 1013/22 1023/19 1031/5 1031/11 1031/12 1034/18 1037/4 1037/11 1041/16 1042/4 1042/12 1042/13 1060/2 1066/14 1066/21 1067/19 1067/23 1067/23 1067/24 1069/2 1070/8 1070/8 1070/12 1070/14 1070/14 1071/14 1071/14 1073/16 1073/17 1077/8 1077/8 1077/16 1078/1 1078/6 1078/16 1078/18</p>
---	---	---	--	---

<p>D</p> <p>Dr. [2] 977/11 1041/18</p> <p>Dr. Alice [1] 977/11</p> <p>Dr. Rolle [1] 1041/18</p> <p>draft [1] 1015/6</p> <p>drafts [1] 978/16</p> <p>draw [5] 996/17 996/24 997/2 1046/15 1063/22</p> <p>drawing [1] 997/5</p> <p>drawn [1] 998/14</p> <p>dreamed [1] 1031/1</p> <p>drive [1] 1030/20</p> <p>drops [1] 1030/17</p> <p>drug [1] 983/6</p> <p>drugs [1] 1037/22</p> <p>Dubin [9] 2/15 964/5 970/23 972/23 1006/10 1023/4 1068/13 1069/18 1071/19</p> <p>Dubin's [1] 970/8</p> <p>due [1] 1034/2</p> <p>dug [1] 1021/9</p> <p>duly [1] 973/14</p> <p>DUNN [3] 1/23 1085/2 1085/16</p> <p>duplicate [2] 993/24 1076/10</p> <p>during [7] 971/17 974/8 980/7 985/3 1011/25 1026/5 1077/1</p> <p>dust [7] 969/10 970/18 970/20 983/8 983/22 1072/7 1072/16</p> <p>dustiness [1] 970/18</p> <p>dusting [1] 1076/20</p> <p>dusty [7] 969/13 974/4 982/16 984/4 984/7 989/9 990/1</p>	<p>egg [1] 1063/23</p> <p>eggs [5] 1063/25 1064/1 1064/2 1064/6 1064/14</p> <p>Egilman [11] 1066/14 1067/24 1069/2 1070/9 1070/14 1071/14 1071/14 1077/8 1077/8 1077/16 1077/17</p> <p>Egilman's [5] 1066/21 1067/23 1070/8 1073/16 1073/17</p> <p>eight [3] 1062/15 1072/10 1074/22</p> <p>either [8] 979/18 982/6 1024/10 1024/19 1040/16 1066/1 1078/23 1082/16</p> <p>electromagnetic [1] 1004/4</p> <p>electron [27] 979/3 992/17 992/20 993/13 993/18 993/25 995/23 996/1 996/10 998/1 998/16 998/22 1003/10 1003/19 1004/1 1004/7 1016/16 1025/3 1026/4 1049/15 1053/23 1054/18 1055/24 1059/1 1059/3 1060/24 1064/25</p> <p>electrons [6] 996/3 996/6 996/7 998/19 1004/20 1055/14</p> <p>elements [1] 1035/10</p> <p>eliminate [1] 1047/22</p> <p>ELMO [4] 996/23 996/24 996/25 997/6</p> <p>else [4] 975/22 1004/11 1058/18 1069/12</p> <p>empty [1] 1028/10</p> <p>end [14] 976/6 982/3 982/21 1001/11 1016/10 1032/5 1054/21 1066/3 1074/11 1074/15 1074/22 1077/23 1080/6 1084/6</p> <p>ended [1] 969/11</p> <p>ends [1] 974/10</p> <p>energy [1] 998/1</p> <p>engineer [1] 977/10</p> <p>England [2] 1041/19 1041/21</p> <p>enough [10] 1003/15 1004/9 1007/19 1009/19 1011/2 1011/23 1014/15 1016/17 1026/9 1051/23</p> <p>entire [3] 1033/8 1039/24 1046/20</p> <p>entitled [1] 977/19</p> <p>EPA [1] 1015/6</p> <p>equals [1] 1011/5</p> <p>equipment [2] 992/13 1040/1</p> <p>Eric [1] 2/4</p>	<p>especially [4] 1004/22 1020/19 1042/23 1050/18</p> <p>establish [1] 1033/19</p> <p>established [1] 1065/18</p> <p>estate [2] 1064/17 1065/2</p> <p>et [4] 1/5 1/8 2/3 1085/7</p> <p>even [26] 966/6 967/16 971/17 992/13 993/11 993/17 1001/2 1001/7 1005/19 1009/3 1015/20 1019/10 1024/1 1024/3 1046/11 1049/6 1052/2 1052/17 1053/11 1053/14 1053/22 1056/21 1063/18 1069/17 1070/4 1076/16</p> <p>evenly [1] 980/19</p> <p>eventually [1] 1055/9</p> <p>ever [18] 980/4 983/5 983/8 989/3 992/7 992/12 993/3 1005/24 1016/7 1020/22 1027/12 1031/15 1032/25 1048/8 1051/3 1063/25 1072/18 1081/4</p> <p>every [30] 976/1 976/2 983/3 991/7 991/8 991/8 991/8 991/10 991/11 991/11 991/13 991/17 991/18 991/20 991/21 992/1 1005/21 1017/9 1020/11 1032/14 1040/19 1044/16 1056/3 1056/4 1056/5 1072/4 1072/10 1072/17 1074/17 1074/21</p> <p>everybody [4] 969/23 969/23 1011/18 1015/5</p> <p>everybody's [3] 969/13 996/4 1000/4</p> <p>everyday [2] 1031/24 1071/11</p> <p>everyone [2] 973/6 973/7</p> <p>everything [9] 973/6 975/17 978/13 986/23 1004/2 1017/13 1052/16 1052/18 1064/20</p> <p>everywhere [1] 1064/7</p> <p>evidence [15] 968/7 971/22 974/25 975/2 978/1 978/4 989/17 989/21 992/22 994/6 1006/8 1031/5 1036/16 1041/3 1043/5</p> <p>exact [1] 1045/16</p> <p>exactly [4] 1004/23 1025/21 1041/25 1067/18</p> <p>examination [6] 3/7 965/4 973/15 1023/17</p>	<p>examine [3] 965/7 970/24 1070/19</p> <p>examined [2] 1031/22 1035/3</p> <p>example [11] 967/13 969/22 970/21 971/16 982/1 1027/16 1029/5 1033/21 1040/9 1068/25 1070/2</p> <p>Except [1] 1049/8</p> <p>exchange [1] 965/10</p> <p>excuse [2] 980/17 1011/16</p> <p>excused [2] 1022/20 1083/10</p> <p>exhibit [19] 972/12 974/23 977/25 978/8 982/11 989/12 994/6 1031/5 1032/4 1036/16 1036/23 1040/7 1041/3 1041/8 1043/5 1054/8 1078/6 1078/7 1081/11</p> <p>Exhibit 7580 [1] 1031/5</p> <p>exhibits [3] 3/4 978/6 978/10</p> <p>exist [3] 1008/5 1040/6 1062/1</p> <p>existed [1] 1040/1</p> <p>exited [1] 965/1</p> <p>expand [1] 968/20</p> <p>expect [5] 965/3 1069/1 1069/13 1075/18 1080/16</p> <p>experience [2] 983/5 1073/11</p> <p>experiment [3] 970/19 972/7 983/9</p> <p>experiments [1] 970/19</p> <p>expert [4] 977/20 978/4 1060/2 1066/15</p> <p>expert's [1] 968/10</p> <p>expertise [1] 993/6</p> <p>experts [5] 965/5 965/7 1048/10 1056/13 1059/8</p> <p>explain [17] 965/5 966/22 994/3 996/17 996/22 997/1 1003/5 1025/17 1034/16 1053/8 1054/4 1060/2 1060/18 1060/19 1060/20 1068/9 1072/1</p> <p>explaining [1] 1004/23</p> <p>explanation [1] 1050/14</p> <p>exposed [8] 969/15 969/21 970/13 983/8 1065/10 1074/3 1074/4 1074/21</p> <p>exposure [40] 971/10 974/9 983/12 983/16 1065/7 1065/19 1065/21 1066/6 1066/8 1066/10 1067/4 1067/5 1067/8 1067/12 1068/6 1068/16 1068/18</p>	<p>1068/25 1069/21 1071/3 1071/6 1071/8 1071/20 1071/23 1071/24 1072/7 1072/12 1072/18 1073/7 1073/10 1074/7 1074/8 1074/18 1074/20 1074/24 1074/25 1075/4 1076/21 1077/11 1077/14</p> <p>exposures [10] 985/10 1065/24 1066/12 1066/13 1070/1 1071/9 1073/2 1073/11 1074/9 1075/7</p> <p>express [1] 1022/15</p> <p>extended [1] 987/23</p> <p>extent [2] 971/23 1069/6</p> <p>extra [1] 1051/20</p> <p>extreme [1] 987/2</p> <p>extremely [1] 997/8</p> <p>F</p> <p>fact [5] 971/14 1014/10 1020/12 1033/16 1082/11</p> <p>factories [1] 1065/20</p> <p>failure [1] 1011/22</p> <p>fair [24] 977/7 977/9 978/20 986/20 1010/22 1010/23 1012/4 1012/5 1014/15 1015/1 1015/2 1028/1 1028/2 1037/14 1037/15 1040/23 1040/24 1063/5 1063/6 1072/24 1075/16 1075/17 1077/11 1077/12</p> <p>fairly [1] 1077/21</p> <p>fairness [2] 1004/16 1070/7</p> <p>falsely [4] 1006/25 1007/23 1008/8 1008/13</p> <p>familiar [4] 979/12 994/23 995/1 1024/5</p> <p>fancy [1] 1055/24</p> <p>far [3] 976/19 992/2 1004/9</p> <p>fault [1] 1001/9</p> <p>FDA [8] 1035/13 1036/11 1037/20 1038/18 1039/19 1046/21 1047/5 1059/12</p> <p>federal [1] 985/9</p> <p>feed [1] 985/2</p> <p>feel [2] 975/11 1005/25</p> <p>fella [1] 1042/14</p> <p>Felsher's [1] 1068/23</p> <p>few [5] 978/18 985/4 1018/24 1048/18 1061/18</p> <p>fiber [73] 967/8 967/9 971/10 979/19 979/19 980/14 982/4 982/6 995/7 995/8 995/25</p>
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<p>F</p> <p>fiber... [62] 996/1 996/2 996/3 998/1 998/2 998/18 998/23 999/1 999/21 999/22 1000/6 1000/7 1000/12 1000/13 1000/16 1000/18 1000/19 1001/13 1001/18 1002/10 1002/11 1002/18 1002/24 1002/25 1003/1 1003/2 1003/20 1003/25 1005/21 1010/3 1016/19 1017/9 1018/5 1018/7 1019/22 1035/10 1044/6 1044/6 1046/22 1046/23 1046/25 1047/25 1048/5 1050/24 1055/2 1057/7 1060/15 1061/2 1061/3 1061/4 1063/12 1063/12 1074/10 1074/10 1074/12 1074/16 1074/22 1074/23 1074/24 1074/24 1074/25 1080/3</p> <p>fiber-like [1] 1046/22</p> <p>fibers [70] 979/20 979/23 980/3 980/4 980/5 980/9 980/14 981/5 982/3 985/11 985/21 985/23 986/13 987/7 988/6 988/15 988/17 988/17 989/4 995/20 996/4 997/15 998/13 998/14 998/15 1001/1 1001/1 1001/5 1005/7 1005/13 1005/14 1005/18 1007/13 1018/13 1018/15 1018/22 1019/6 1019/14 1019/15 1019/25 1020/2 1035/7 1035/7 1048/1 1048/6 1050/20 1050/23 1055/19 1055/24 1058/17 1061/6 1061/8 1061/11 1061/23 1061/24 1062/4 1062/11 1062/15 1062/19 1062/20 1062/25 1063/4 1073/14 1074/3 1074/14 1077/1 1077/4 1080/4 1082/10 1082/11</p> <p>fibrous [4] 1009/3 1047/11 1047/24 1048/5</p> <p>Fifteen [1] 1037/11</p> <p>figure [3] 1000/5 1040/14 1069/1</p> <p>figures [3] 1052/9 1066/18 1067/1</p> <p>figuring [2] 974/9 1024/22</p>	<p>file [2] 1033/9 1033/13 files [4] 1033/5 1033/17 1033/20 1034/1</p> <p>filter [10] 1001/15 1001/18 1055/8 1055/9 1055/10 1055/11 1055/13 1055/16 1055/18 1059/19</p> <p>filters [9] 985/6 985/8 1020/6 1020/7 1020/9 1020/13 1020/16 1020/18 1020/22</p> <p>final [9] 977/16 977/19 977/25 978/16 978/19 990/24 1014/19 1046/12 1077/23</p> <p>find [61] 965/19 981/22 995/5 999/20 1000/10 1001/4 1014/4 1014/6 1014/10 1014/12 1015/17 1015/18 1015/24 1016/3 1016/12 1016/14 1016/19 1016/24 1018/16 1018/22 1019/6 1019/12 1019/14 1019/25 1020/1 1020/1 1020/2 1021/3 1021/4 1038/6 1042/7 1042/8 1042/15 1042/18 1045/22 1048/21 1049/3 1050/24 1051/5 1051/8 1055/2 1059/10 1060/16 1061/2 1061/8 1063/11 1064/2 1064/3 1064/5 1064/6 1064/7 1064/15 1070/3 1075/19 1075/20 1080/9 1080/13 1080/16 1081/22 1081/25 1082/11</p> <p>finding [12] 983/9 988/19 1005/14 1014/13 1017/23 1019/22 1045/5 1061/4 1062/12 1062/17 1080/3 1080/24</p> <p>findings [4] 981/24 986/17 1048/10 1081/21</p> <p>finds [3] 1002/23 1003/2 1014/21</p> <p>fine [9] 969/7 972/10 974/1 974/21 983/18 1001/21 1015/21 1076/7 1084/2</p> <p>fingers [1] 980/22</p> <p>firm [4] 2/4 2/7 2/10 981/10</p> <p>first [13] 969/10 973/14 974/14 974/15 993/14 1005/12 1008/2 1009/5 1011/2 1011/23 1036/22 1065/14 1074/8</p> <p>fish [1] 1013/15</p> <p>fit [1] 990/16</p>	<p>fits [1] 1049/16 five [15] 985/4 1019/14 1019/17 1019/19 1019/20 1019/20 1019/21 1020/4 1022/5 1022/10 1061/12 1062/6 1062/18 1062/19 1083/24</p> <p>flat [1] 1003/6</p> <p>flavor [2] 976/14 1028/21</p> <p>flip [2] 999/2 999/10</p> <p>float [4] 1029/16 1030/3 1040/13 1040/16</p> <p>floatation [1] 1036/6</p> <p>floating [1] 1040/22</p> <p>floats [2] 1029/9 1030/13</p> <p>floor [3] 1017/24 1030/24 1058/9</p> <p>flow [1] 1014/8</p> <p>flowchart [2] 1048/22 1048/23</p> <p>flowerbeds [3] 1064/13 1064/14 1064/14</p> <p>FM [1] 2/10</p> <p>focus [2] 998/5 1060/19</p> <p>foil [1] 983/21</p> <p>folks [12] 975/9 990/12 994/21 1022/2 1040/11 1049/7 1065/12 1065/24 1066/3 1066/13 1074/3 1077/13</p> <p>follow [2] 974/11 1027/13</p> <p>following [7] 964/3 973/3 1022/21 1023/9 1032/23 1067/17 1083/11</p> <p>food [2] 1047/5 1047/5</p> <p>foods [1] 1037/22</p> <p>force [6] 975/14 975/15 976/2 976/14 1030/18 1030/20</p> <p>foregoing [1] 1085/9</p> <p>forgeries [1] 976/21</p> <p>forget [2] 1052/8 1064/3</p> <p>forgot [1] 1062/8</p> <p>form [11] 978/20 981/18 1022/15 1024/10 1024/19 1025/9 1033/13 1035/8 1045/9 1046/23 1047/11</p> <p>formed [3] 979/25 980/6 998/3</p> <p>forming [1] 1044/6</p> <p>forms [2] 1046/25 1055/7</p> <p>formula [1] 1073/18</p> <p>forward [1] 973/12</p> <p>found [31] 979/2 985/13 985/21 1008/4 1014/11 1014/11</p>	<p>1019/2 1019/3 1019/5 1035/16 1044/7 1044/18 1045/1 1045/3 1048/9 1048/11 1048/13 1048/14 1062/15 1062/22 1063/4 1065/15 1067/24 1072/18 1076/1 1076/3 1076/16 1078/14 1080/10 1080/20 1080/22</p> <p>foundation [6] 970/5 990/7 994/10 994/15 1012/24 1033/19</p> <p>foundation's [1] 1032/8</p> <p>four [16] 991/1 1010/24 1012/1 1012/1 1014/22 1019/15 1019/25 1020/2 1061/8 1061/11 1061/23 1062/4 1062/14 1062/15 1062/16 1062/20</p> <p>fragments [1] 1047/25</p> <p>framework [2] 974/16 1040/22</p> <p>free [5] 1004/13 1051/6 1061/21 1062/12 1080/11</p> <p>freeze [1] 1028/22</p> <p>front [2] 1032/17 1036/23</p> <p>full [4] 972/22 972/23 989/13 1068/6</p> <p>fully [2] 976/21 1070/9</p> <p>further [6] 969/4 972/20 973/16 1023/12 1070/13 1085/9</p> <p>fuss [1] 1082/3</p> <p>fussing [1] 1082/5</p> <p>future [1] 1080/25</p> <p>G</p> <p>GAIL [3] 1/5 2/3 1085/7</p> <p>gallon [1] 1051/12</p> <p>game [1] 1064/19</p> <p>gave [1] 1071/4</p> <p>gee [1] 969/12</p> <p>general [1] 971/13</p> <p>generally [5] 988/25 989/1 989/2 1035/21 1061/12</p> <p>generated [1] 1077/1</p> <p>generation [1] 1053/11</p> <p>genitals [1] 989/6</p> <p>gentleman [2] 1039/12 1068/6</p> <p>gentlemen [2] 973/19 1082/20</p> <p>geologic [1] 993/7</p> <p>geologist [3] 977/6 977/7 993/8</p> <p>geology [1] 977/12</p> <p>George [1] 1037/16</p> <p>get [77] 965/7 966/21 968/6 969/7 969/13 969/21 969/23 969/24 970/13 970/23 971/23</p>	<p>972/8 973/7 973/10 973/24 976/3 979/10 980/6 980/22 985/12 1000/1 1001/21 1001/21 1001/22 1001/22 1001/22 1001/25 1002/18 1002/20 1004/21 1005/8 1005/15 1010/3 1010/4 1010/15 1011/6 1011/10 1012/8 1015/13 1015/16 1015/25 1017/16 1017/16 1018/1 1018/14 1021/24 1028/6 1029/4 1029/5 1030/1 1030/23 1036/5 1036/22 1040/14 1042/21 1048/25 1049/3 1049/24 1051/14 1053/10 1054/4 1055/7 1055/8 1055/9 1055/11 1055/14 1055/21 1058/3 1058/9 1059/15 1060/24 1062/12 1073/21 1076/19 1077/7 1082/17 1083/24</p> <p>gets [5] 1012/20 1013/13 1017/17 1061/15 1082/21</p> <p>getting [16] 982/21 1003/16 1003/19 1013/16 1016/17 1018/15 1027/1 1038/19 1053/13 1057/5 1058/4 1059/20 1066/21 1070/13 1072/7 1078/9</p> <p>gift [1] 999/15</p> <p>give [19] 967/9 973/22 975/11 976/14 976/23 986/5 991/16 997/4 1010/10 1017/3 1024/11 1028/16 1031/11 1040/9 1059/25 1066/24 1074/8 1077/7 1080/21</p> <p>given [8] 964/15 968/1 968/21 970/9 1022/12 1054/19 1081/11 1083/1</p> <p>gives [6] 974/19 996/10 999/19 1021/17 1056/10 1056/10</p> <p>glass [2] 1015/11 1017/11</p> <p>glasses [4] 980/22 1011/10 1011/20 1013/12</p> <p>GLENN [1] 2/25</p> <p>go [54] 966/9 972/8 973/10 974/12 974/19 976/6 978/4 979/10 979/11 981/21 982/15 993/17 995/18 998/25 999/1 999/1 1000/15 1001/19 1003/8 1003/9</p>
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<p>G go... [34] 1009/17 1013/5 1015/12 1017/14 1019/3 1019/15 1022/4 1022/4 1029/10 1029/25 1030/4 1041/1 1043/2 1050/15 1051/21 1052/8 1054/19 1055/2 1055/5 1057/20 1058/5 1058/8 1060/20 1061/3 1065/20 1069/19 1075/19 1076/8 1077/23 1080/14 1080/25 1082/9 1082/21 1083/17 goes [9] 967/16 996/10 1003/6 1013/19 1026/7 1030/21 1040/10 1050/12 1070/5 going [95] 964/19 965/25 968/25 969/13 970/6 970/9 972/1 973/1 973/6 974/3 974/3 974/4 974/5 974/8 974/24 975/20 977/2 979/10 984/7 984/14 990/5 992/23 993/3 993/5 995/11 995/15 996/3 997/25 998/19 998/23 999/7 999/9 1001/4 1003/24 1004/7 1006/6 1011/1 1011/9 1011/24 1012/8 1012/23 1013/11 1014/5 1016/1 1016/8 1016/22 1021/3 1022/1 1022/4 1025/14 1030/2 1030/3 1030/4 1034/19 1037/3 1039/23 1041/19 1050/14 1050/15 1054/25 1054/25 1055/25 1056/1 1057/16 1057/23 1058/11 1059/22 1061/23 1065/5 1066/20 1066/22 1067/13 1067/14 1067/19 1067/25 1068/2 1068/14 1068/15 1069/4 1069/18 1069/19 1069/21 1070/11 1070/12 1070/14 1070/16 1070/17 1072/22 1077/13 1078/2 1078/15 1078/16 1081/25 1082/14 1083/17 gone [1] 1075/1 good [25] 973/19 973/19 1008/8 1008/12 1010/19 1010/19 1012/6 1012/6 1016/9 1025/23 1026/19 1026/25 1027/1 1029/1 1045/12 1045/20</p>	<p>1045/22 1045/24 1046/3 1046/4 1049/9 1051/17 1064/11 1064/16 1081/9 got [100] 965/6 969/18 970/15 971/6 974/7 975/11 977/2 977/12 978/12 978/12 978/19 979/5 980/2 980/22 981/11 982/1 983/1 983/6 985/24 987/7 989/9 989/10 989/11 989/14 990/24 991/15 993/23 995/12 995/14 995/16 996/13 996/20 996/21 999/14 1001/12 1002/10 1002/11 1002/13 1003/7 1003/14 1003/22 1005/2 1005/21 1006/5 1010/12 1011/9 1014/2 1014/23 1015/17 1017/6 1017/14 1017/21 1017/22 1018/4 1018/24 1019/8 1019/21 1019/23 1020/7 1021/18 1022/2 1022/3 1028/16 1029/25 1030/7 1031/12 1031/17 1033/12 1033/13 1034/4 1035/19 1035/24 1037/12 1041/11 1045/5 1050/25 1051/22 1052/7 1055/25 1056/1 1056/5 1057/12 1059/25 1060/3 1061/12 1062/6 1065/3 1065/5 1066/15 1070/9 1073/18 1074/12 1076/8 1076/10 1076/18 1077/5 1081/2 1081/9 1081/18 1082/8 grade [3] 1007/12 1031/23 1035/3 graduating [1] 999/14 gram [23] 985/22 985/23 986/2 986/3 986/4 986/10 986/10 986/13 988/20 1029/20 1030/8 1052/11 1060/15 1061/6 1061/24 1062/3 1062/7 1063/1 1076/4 1076/9 1080/4 1080/8 1082/1 grams [12] 986/6 986/12 1010/16 1010/17 1011/5 1011/6 1030/9 1030/12 1030/13 1052/13 1062/9 1062/10 Grand [1] 2/24 great [3] 982/15 1007/19 1059/7 greater [2] 1007/13 1026/16 grid [43] 4/11 1017/12 1049/14 1049/17</p>	<p>1049/20 1049/23 1050/1 1050/1 1050/18 1054/3 1054/4 1054/5 1054/18 1054/22 1055/3 1055/5 1055/13 1055/20 1055/25 1056/2 1056/3 1056/4 1056/5 1056/7 1056/9 1056/11 1058/4 1058/5 1058/18 1060/25 1061/1 1061/8 1061/10 1061/11 1063/9 1063/12 1063/14 1063/14 1063/17 1063/18 1081/2 1081/2 1081/2 grids [1] 1056/8 groin [1] 1072/5 ground [6] 979/25 980/6 1006/12 1011/25 1021/9 1021/10 group [3] 971/15 1000/9 1011/15 groups [1] 980/14 growing [1] 1063/25 guardrails [1] 1070/20 guess [7] 970/14 975/13 977/5 1004/14 1005/17 1074/8 1074/15 gum [3] 983/21 983/23 989/5 gun [1] 979/6 H had [51] 964/3 964/5 964/13 966/15 970/22 970/24 971/7 971/17 973/3 976/1 976/4 976/5 982/20 982/23 983/21 984/22 985/20 987/8 988/24 990/3 992/13 992/16 992/17 995/19 1007/12 1018/8 1020/25 1021/1 1022/21 1023/9 1029/4 1031/16 1032/4 1032/23 1032/24 1038/17 1040/4 1048/11 1067/17 1068/5 1068/6 1068/15 1069/2 1070/19 1071/3 1076/13 1076/14 1076/16 1078/14 1083/11 1085/6 hadn't [1] 1018/10 hair [4] 1053/1 1053/2 1053/5 1053/9 half [7] 986/7 986/11 986/12 987/9 987/9 987/10 1064/21 hand [1] 976/5 handcuffed [1] 976/4 handed [3] 964/6 1050/3 1082/7 hands [2] 1075/6 1075/7 hands-on [2] 1075/6 1075/7</p>	<p>handwriting [1] 1034/12 handwritten [4] 1032/7 1032/10 1033/25 1034/11 Hang [1] 964/22 happen [1] 1002/9 happens [5] 979/22 983/19 998/13 1024/21 1072/13 happy [2] 1032/18 1068/21 hard [6] 1005/7 1005/15 1005/17 1039/3 1039/13 1052/23 HARDY [1] 2/23 harmful [1] 1046/22 has [55] 966/8 966/12 967/20 968/1 968/13 968/15 968/23 969/24 970/4 978/22 984/11 992/14 993/3 994/14 995/4 1002/11 1011/14 1012/6 1016/10 1016/20 1016/24 1018/21 1019/19 1019/20 1021/8 1027/3 1028/22 1029/20 1033/19 1037/20 1038/1 1045/1 1046/21 1050/3 1050/23 1051/12 1051/13 1052/2 1052/9 1053/1 1054/19 1058/20 1061/3 1061/5 1062/18 1065/15 1067/11 1069/15 1069/15 1069/25 1072/4 1072/16 1074/18 1080/17 1080/19 hasn't [2] 964/15 968/21 have [230] haven't [4] 986/22 992/6 992/11 1031/16 having [8] 969/10 973/14 995/1 1001/3 1026/16 1032/17 1056/24 1073/1 hay [16] 1015/17 1016/1 1017/17 1017/20 1017/21 1028/6 1028/6 1029/6 1029/7 1029/9 1029/9 1029/16 1029/25 1030/23 1058/7 1058/9 haystack [7] 1015/14 1015/16 1015/24 1015/25 1016/5 1016/12 1020/2 he [75] 964/7 964/7 964/11 964/14 964/15 964/16 965/14 965/16 965/19 967/7 967/16 967/18 967/20 968/1 968/2 968/7 968/9 968/13 968/15 968/21 968/23 968/25 968/25</p>	<p>970/4 970/24 971/16 971/17 972/8 983/2 984/22 991/4 994/14 994/17 996/16 1000/21 1023/23 1023/24 1032/4 1033/19 1039/23 1040/18 1044/11 1044/13 1065/16 1065/18 1067/25 1068/2 1068/2 1068/4 1068/7 1068/10 1068/11 1068/17 1068/21 1068/22 1068/22 1068/25 1069/7 1069/7 1069/10 1069/14 1069/15 1069/15 1069/25 1070/2 1070/3 1070/8 1070/18 1071/19 1073/18 1074/18 1074/18 1077/8 1077/19 1079/1 he's [18] 966/23 967/3 970/3 991/16 1039/23 1060/3 1066/23 1067/18 1068/8 1068/14 1068/15 1069/20 1069/20 1070/9 1070/11 1070/16 1070/17 1083/17 head [1] 985/1 health [2] 1035/15 1066/15 health/science [1] 1066/15 hear [6] 969/17 972/6 984/10 1024/12 1049/14 1061/19 heard [1] 977/11 hearing [4] 964/4 1022/14 1022/22 1083/12 heart [1] 967/4 heat [3] 1024/11 1024/11 1025/9 heating [1] 1024/9 heavy [10] 1030/7 1030/10 1030/10 1035/24 1036/2 1040/9 1065/19 1065/21 1065/23 1080/12 Heck [1] 1011/11 Hegarty [1] 2/23 held [2] 1055/20 1084/5 help [6] 994/3 995/14 1021/3 1030/14 1030/20 1052/5 helpful [2] 997/12 1049/19 HEPLER [1] 2/20 her [12] 1031/15 1031/17 1031/18 1033/15 1033/19 1037/4 1078/7 1078/8 1078/9 1078/9 1079/22 1082/4 here [48] 964/25</p>
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<p>H here... [47] 968/11 977/2 980/11 980/12 985/24 989/15 990/18 996/23 998/6 998/6 998/7 998/17 998/17 998/18 998/20 999/19 1000/17 1000/19 1001/10 1001/11 1001/18 1001/19 1001/20 1001/22 1002/9 1002/22 1003/14 1004/7 1006/22 1013/11 1013/18 1021/18 1022/3 1022/6 1032/2 1035/8 1041/8 1044/25 1049/15 1051/23 1054/15 1054/20 1067/19 1069/22 1078/17 1081/23 1082/8 here's [3] 987/4 1001/6 1001/6 hereby [1] 1085/3 HERRINGTON [1] 2/13 hey [1] 1011/18 hiding [1] 1018/13 high [10] 998/1 1005/19 1016/18 1054/16 1054/16 1064/17 1074/11 1075/21 1076/11 1080/6 high-end [1] 1080/6 higher [8] 986/23 986/24 1004/22 1016/10 1019/7 1021/18 1076/3 1076/11 highest [12] 971/16 985/20 986/21 987/3 987/6 988/3 988/5 988/15 1056/19 1069/16 1070/2 1075/15 highlighted [1] 1002/23 hill [1] 997/2 him [26] 964/9 964/10 965/8 968/7 969/3 969/20 970/2 970/7 970/16 973/10 973/10 985/2 1066/17 1068/1 1068/6 1068/7 1068/8 1068/8 1068/10 1069/4 1069/13 1069/19 1070/15 1073/22 1073/24 1082/17 himself [1] 1069/15 hint [4] 995/6 995/16 999/20 1000/10 hire [1] 1020/18 hired [2] 990/15 1005/11 his [35] 965/12 965/15 965/17 965/19 966/13 967/4 967/19 968/20</p>	<p>969/3 970/6 976/5 985/1 994/10 1005/5 1037/13 1040/18 1051/3 1065/14 1066/18 1066/22 1067/20 1068/4 1068/17 1068/20 1069/16 1069/21 1070/6 1070/12 1070/12 1070/17 1070/17 1070/18 1073/18 1077/8 1077/9 historical [2] 1079/10 1079/11 history [1] 1038/1 hits [3] 996/9 998/1 1003/23 hitting [2] 1003/19 1003/20 hog [1] 1019/25 hold [1] 995/13 holding [1] 1072/25 holds [1] 1055/18 holes [1] 1049/21 HOLLAND [2] 2/4 2/4 home [1] 1073/6 homework [1] 978/19 HON [1] 2/25 honest [1] 996/13 honestly [1] 1005/13 honor [74] 964/13 964/20 964/24 966/4 966/11 966/19 967/6 968/4 968/22 969/5 969/6 970/15 971/12 972/10 972/18 973/9 973/18 974/23 974/25 975/4 977/24 978/2 978/9 989/11 989/18 989/19 989/24 993/5 994/5 994/8 994/13 994/20 996/16 996/24 1000/21 1005/7 1006/7 1008/9 1011/24 1015/24 1021/25 1022/7 1023/3 1023/5 1023/14 1027/19 1031/4 1031/7 1031/10 1031/16 1032/3 1032/9 1032/16 1033/2 1034/2 1034/24 1036/15 1036/17 1041/2 1041/4 1043/4 1043/7 1047/16 1054/7 1059/24 1065/17 1066/20 1066/22 1067/13 1068/14 1071/1 1081/8 1082/15 1083/20 Honor's [2] 994/16 1006/13 Honorable [1] 1/2 hope [4] 1016/17 1029/21 1029/24 1046/4 hopefully [3] 973/24 974/9 982/12 hotel [1] 964/9 hour [8] 991/7 991/8 991/11 991/18 991/21</p>	<p>1044/16 1082/21 1084/5 hours [1] 1074/22 house [3] 972/23 1026/16 1079/22 Houston [1] 2/11 how [72] 966/20 966/22 968/8 972/20 976/19 976/20 979/24 980/4 980/5 980/13 982/5 982/6 987/1 988/6 988/14 988/16 990/16 991/2 991/6 1005/17 1008/5 1008/16 1008/17 1010/4 1010/25 1012/7 1012/13 1012/14 1013/17 1014/5 1016/18 1016/24 1019/11 1021/25 1024/22 1024/25 1028/4 1028/13 1029/5 1030/21 1038/25 1039/23 1045/3 1050/22 1051/13 1053/21 1054/24 1055/21 1056/13 1056/17 1057/17 1057/24 1058/8 1060/14 1060/22 1060/23 1061/24 1065/10 1067/11 1068/12 1071/24 1074/2 1074/3 1074/6 1075/2 1075/5 1075/5 1075/6 1076/20 1076/20 1077/4 1078/22 however [3] 1035/14 1044/3 1044/4 HPV [1] 969/24 huh [1] 1036/20 humanity [1] 1038/1 humans [1] 1011/14 hundred [3] 991/11 1016/4 1044/17 hundreds [10] 991/15 991/17 992/1 992/8 1026/12 1026/12 1044/16 1052/11 1058/23 1058/23 hundredths [1] 1052/10 hungry [1] 1057/15 hunt [2] 1063/25 1064/1 I I'd [8] 969/13 973/22 974/24 996/21 1021/24 1036/21 1077/6 1077/20 I'll [16] 972/6 972/9 973/10 979/10 996/25 997/4 1002/10 1031/11 1041/2 1066/24 1073/25 1081/1 1082/16 1082/16 1083/23 1083/25</p>	<p>I'm [66] 967/23 969/8 969/16 969/25 970/8 971/19 972/1 972/16 974/2 974/4 977/9 978/24 979/10 990/5 993/5 993/10 995/11 996/15 999/7 999/9 1001/7 1002/7 1002/8 1005/7 1006/6 1011/1 1011/9 1011/24 1012/23 1014/13 1015/7 1016/1 1016/20 1016/22 1018/23 1022/7 1029/21 1029/24 1032/3 1034/19 1037/18 1040/8 1041/19 1043/1 1050/24 1057/15 1057/15 1059/3 1066/20 1066/22 1067/13 1068/8 1068/21 1069/19 1074/21 1074/21 1077/3 1078/2 1078/15 1078/16 1081/25 1082/5 1082/5 1082/6 1082/6 1083/18 I've [27] 969/18 974/7 978/12 982/1 982/11 990/14 990/24 995/12 998/14 1002/22 1003/23 1017/6 1021/18 1023/20 1044/25 1056/19 1057/10 1059/25 1064/1 1065/23 1072/21 1076/8 1077/24 1078/1 1079/1 1081/9 1081/11 idea [7] 973/23 974/15 986/5 992/7 1030/25 1036/12 1044/22 identifiable [1] 1048/4 identification [4] 1037/23 1038/2 1038/18 1045/9 identified [2] 1032/25 1046/24 identify [4] 1033/3 1045/13 1045/25 1046/8 II [1] 2/15 illustration [1] 1058/7 image [1] 996/2 imagine [1] 968/10 Imerys [4] 964/8 964/17 967/14 967/14 implication [1] 1046/25 important [4] 997/9 1026/2 1063/7 1064/6 impression [1] 991/16 inappropriate [2] 967/8 967/22 INC [1] 2/12 inches [1] 1064/21 included [1] 975/9 including [1] 1032/14 inconsistent [1]</p>	<p>1008/6 increased [1] 1054/17 increases [1] 1061/2 incumbent [1] 1068/13 independent [1] 993/2 indicate [2] 981/11 992/8 indicated [4] 964/11 966/12 1005/5 1068/2 indicates [2] 989/3 992/12 individual [1] 1067/20 individually [1] 1031/15 individuals [1] 967/22 industrial [3] 1035/15 1072/18 1072/24 information [6] 989/8 1021/17 1022/18 1033/23 1083/6 1083/7 INGHAM [3] 1/5 2/3 1085/7 inhale [1] 989/5 ink [1] 976/18 inking [1] 976/19 inquire [1] 966/14 inquired [1] 965/18 inquiry [2] 973/16 1023/12 inside [2] 983/21 996/2 installing [1] 1066/2 instead [15] 987/8 987/21 1004/6 1004/7 1004/8 1010/6 1030/6 1030/8 1042/2 1049/25 1058/4 1062/14 1063/12 1073/2 1073/4 insulating [1] 1066/4 insulation [1] 1066/4 intended [1] 964/7 intends [1] 965/12 intent [1] 1071/13 intention [2] 964/11 966/12 interest [3] 982/13 1074/1 1078/2 interested [2] 998/13 1000/2 interesting [4] 975/6 975/12 975/18 976/8 interference [1] 1004/21 Internet [1] 1083/5 interpret [1] 1038/25 interpreted [1] 982/7 introduction [1] 971/22 investigation [2] 1022/17 1083/2 involved [2] 1033/22 1034/4 iron [3] 1080/21 1080/22 1081/6 irreplaceable [1] 1053/20 irrespective [1] 994/15 is [309] isn't [2] 967/13 967/14 isolation [7] 1036/13</p>
---	---	--	---	--

<p>I</p> <p>isolation... [6] 1038/8 1038/11 1038/19 1039/4 1039/15 1039/17</p> <p>issue [8] 966/11 994/11 1027/11 1027/18 1028/1 1059/6 1068/2 1083/17</p> <p>issues [3] 1027/3 1037/14 1077/19</p> <p>it [470]</p> <p>it's [159]</p> <p>Italian [2] 1042/7 1042/18</p> <p>its [5] 994/19 1005/10 1013/17 1025/23 1027/2</p> <p>itself [4] 979/19 988/3 1035/11 1052/2</p>	<p>1015/4 1019/3 1019/11 1020/25 1022/22 1025/19 1029/23 1031/12 1032/17 1035/20 1036/21 1040/18 1042/11 1042/13 1044/11 1048/8 1050/4 1054/1 1054/4 1054/14 1056/17 1061/19 1071/14 1071/18 1074/6 1075/14 1075/22 1076/23 1079/8 1082/8 1083/12</p> <p>jury's [3] 965/6 975/11 1073/25</p> <p>just [91] 967/4 969/14 969/20 969/22 971/19 971/21 974/15 975/11 976/3 976/9 976/13 979/11 979/19 980/23 983/17 987/9 987/15 988/23 990/20 991/12 991/22 993/1 996/23 997/16 998/4 998/7 998/14 998/24 1000/25 1001/21 1002/8 1004/4 1006/2 1007/17 1008/10 1008/20 1012/15 1013/2 1013/20 1013/24 1014/1 1014/23 1015/10 1015/11 1016/6 1016/12 1017/1 1017/17 1018/18 1019/8 1019/22 1019/25 1021/15 1021/15 1025/23 1026/1 1026/4 1026/9 1029/11 1029/13 1030/22 1033/14 1033/19 1033/24 1036/3 1040/4 1040/8 1044/12 1048/18 1048/22 1049/13 1050/4 1051/16 1051/20 1052/18 1053/2 1054/22 1058/10 1059/3 1059/24 1061/23 1064/13 1064/14 1068/15 1071/24 1073/17 1076/5 1078/4 1078/15 1082/5 1083/20</p>	<p>993/22 996/15 999/10 1001/25 1006/7 1009/6 1011/19 1012/2 1036/9 1058/3 1075/2 1076/9</p> <p>kinds [3] 975/8 991/22 1063/4</p> <p>knew [1] 1067/25</p> <p>know [44] 965/11 965/24 966/15 967/14 968/4 982/4 984/12 986/21 989/7 992/17 997/1 1000/15 1007/5 1017/5 1017/19 1018/9 1021/25 1025/14 1025/15 1025/20 1025/22 1025/23 1027/16 1028/13 1028/25 1030/15 1033/3 1039/8 1044/24 1045/3 1048/17 1052/13 1054/25 1059/4 1059/4 1059/18 1063/20 1064/19 1066/1 1067/18 1068/22 1076/6 1079/13 1081/24</p> <p>knowing [1] 988/4</p> <p>knowledge [5] 967/21 993/2 1027/20 1036/12 1040/6</p> <p>known [1] 1027/25</p> <p>knows [2] 964/13 1012/7</p> <p>Krystal [3] 1079/20 1079/21 1079/21</p>	<p>1032/19 1032/20 1032/24 1064/19 1082/17</p> <p>late [1] 993/16</p> <p>later [7] 985/12 995/11 995/13 1042/1 1045/17 1045/17 1078/14</p> <p>law [5] 2/4 2/7 2/10 971/2 981/10</p> <p>lawyer [1] 1079/12</p> <p>lawyers [4] 1033/22 1034/4 1079/1 1079/13</p> <p>lay [2] 1033/18 1057/22</p> <p>layer [2] 1011/23 1055/16</p> <p>laying [1] 1017/12</p> <p>lead [4] 1051/4 1051/6 1051/8 1051/12</p> <p>lead-free [1] 1051/6</p> <p>lean [1] 1009/21</p> <p>learn [1] 1024/2</p> <p>least [4] 981/12 1017/5 1017/10 1021/19</p> <p>leave [3] 977/5 989/9 1023/20</p> <p>Lee [8] 2/8 995/2 995/4 1000/9 1004/6 1005/3 1007/17 1037/16</p> <p>leeway [1] 1066/24</p> <p>left [5] 997/7 1000/24 1017/22 1057/21 1081/9</p> <p>lends [1] 1013/17</p> <p>length [1] 981/3</p> <p>lenses [1] 1004/4</p> <p>less [9] 1026/17 1030/2 1051/12 1053/9 1058/14 1058/24 1059/16 1063/8 1075/20</p> <p>let [9] 976/5 985/4 993/22 1017/1 1025/15 1029/13 1051/16 1061/7 1083/4</p> <p>let's [25] 964/18 975/15 982/15 982/16 986/11 988/2 989/25 990/18 990/18 990/19 1006/5 1009/16 1010/15 1011/2 1022/4 1029/8 1032/20 1040/25 1052/8 1052/21 1054/3 1054/5 1062/14 1065/4 1075/9</p> <p>lets [1] 1013/13</p> <p>letter [1] 4/8</p> <p>letterhead [1] 1041/12</p> <p>level [5] 1009/4 1035/14 1073/7 1080/6 1081/22</p> <p>light [29] 980/23 981/1 992/18 996/5 1009/16 1013/5 1013/6 1013/9 1013/10 1013/12 1013/17 1013/18 1013/20 1015/5 1015/9 1021/16 1025/2 1026/3 1026/7 1026/11</p>	<p>1026/13 1026/18 1035/25 1042/3 1042/5 1045/20 1045/23 1049/2 1070/15</p> <p>lighting [2] 983/20 1013/11</p> <p>lights [1] 1013/14</p> <p>like [54] 965/5 966/22 969/14 969/15 973/22 974/24 976/3 976/23 978/15 978/24 979/24 984/25 985/2 988/1 995/19 996/21 997/10 997/15 998/7 998/16 998/17 1003/6 1004/14 1008/20 1009/1 1012/4 1013/11 1015/11 1015/21 1016/15 1018/9 1019/25 1021/24 1022/3 1024/15 1025/17 1025/22 1030/23 1032/18 1034/12 1036/3 1036/21 1038/18 1046/22 1049/19 1052/9 1055/16 1063/16 1068/11 1068/12 1075/1 1077/20 1079/6 1080/5</p> <p>likened [1] 1025/12</p> <p>limit [3] 1061/16 1062/4 1081/3</p> <p>limitations [1] 1025/23</p> <p>line [6] 971/6 1013/18 1013/24 1013/24 1013/25 1078/1</p> <p>lined [1] 1003/13</p> <p>lines [1] 1063/21</p> <p>liquid [6] 1030/7 1030/11 1035/24 1036/2 1040/10 1080/12</p> <p>Lisa [1] 2/14</p> <p>list [7] 964/10 965/11 966/14 966/16 967/20 969/3 994/11</p> <p>lists [1] 964/14</p> <p>litany [2] 1008/18 1008/18</p> <p>litter [1] 1051/8</p> <p>literally [1] 1015/14</p> <p>litigation [1] 1033/22</p> <p>little [39] 969/8 974/18 974/19 976/16 977/3 980/18 980/21 980/25 984/25 985/24 986/7 986/15 986/16 987/7 987/12 987/18 1005/13 1009/17 1014/6 1016/6 1016/7 1016/13 1017/24 1017/25 1029/14 1030/23 1031/19 1035/10 1048/17 1052/12 1053/2 1057/13 1058/17 1058/17 1064/22 1066/24 1073/3 1076/3 1083/9</p>
<p>J</p> <p>January [1] 1006/20</p> <p>jdunncourts [1] 1/25</p> <p>JENNIFER [3] 1/23 1085/2 1085/16</p> <p>jet [1] 976/2</p> <p>jeweler [1] 1010/7</p> <p>jeweler's [4] 1010/9 1010/10 1015/21 1052/2</p> <p>JOHNSON [127]</p> <p>Johnson's [6] 1027/20 1033/3 1040/18 1059/8 1061/13 1079/17</p> <p>joint [3] 1043/25 1066/5 1073/3</p> <p>Juan's [1] 985/24</p> <p>judge [13] 1/2 972/11 987/5 1043/9 1050/4 1054/13 1058/12 1060/9 1070/23 1073/21 1075/3 1082/19 1084/1</p> <p>JUDICIAL [1] 1/24</p> <p>juice [4] 1028/10 1028/13 1028/14 1028/21</p> <p>Julie [6] 4/6 968/11 968/14 994/23 995/4 1006/19</p> <p>jumbo [1] 1062/7</p> <p>jump [1] 1053/15</p> <p>jumper [2] 975/19 975/22</p> <p>June [3] 1/16 964/2 1085/5</p> <p>June 7 [1] 964/2</p> <p>jurors [1] 969/12</p> <p>jury [57] 3/4 964/4 973/2 973/23 974/18 974/25 975/7 976/14 977/11 978/14 978/20 978/22 982/20 983/2 985/12 986/18 987/4 991/2 991/20 992/21 994/2 996/23 997/8 997/10 1005/5 1008/15</p>	<p>K</p> <p>Kansas [1] 2/24</p> <p>keep [9] 1003/12 1004/9 1021/25 1028/9 1028/21 1039/23 1055/3 1057/16 1083/2</p> <p>kept [1] 1033/15</p> <p>kid [1] 1072/11</p> <p>kids [3] 1063/25 1064/2 1064/10</p> <p>Kim [1] 1079/20</p> <p>kind [17] 980/11 983/8 983/21 986/5 992/14</p>	<p>L</p> <p>lab [9] 992/14 1020/19 1020/21 1026/12 1045/22 1045/25 1046/3 1046/5 1053/18</p> <p>laboratory [3] 976/1 985/9 1045/13</p> <p>labs [2] 990/15 1053/12</p> <p>lack [1] 1063/7</p> <p>lacks [3] 990/6 994/10 1012/23</p> <p>ladies [4] 973/19 987/21 1066/11 1082/20</p> <p>laid [1] 1032/8</p> <p>land [1] 976/2</p> <p>language [1] 1031/24</p> <p>LANIER [18] 2/7 2/8 2/9 2/10 3/7 964/6 965/2 973/17 973/21 975/5 978/14 997/4 997/8 1002/3 1012/2 1023/13 1047/22 1083/16</p> <p>Lanier's [1] 1067/21</p> <p>large [1] 1028/20</p> <p>largely [1] 1068/23</p> <p>larger [3] 987/21 987/23 987/25</p> <p>largest [1] 988/12</p> <p>last [8] 1006/20 1014/24 1025/11</p>	<p>lends [1] 1013/17</p> <p>length [1] 981/3</p> <p>lenses [1] 1004/4</p> <p>less [9] 1026/17 1030/2 1051/12 1053/9 1058/14 1058/24 1059/16 1063/8 1075/20</p> <p>let [9] 976/5 985/4 993/22 1017/1 1025/15 1029/13 1051/16 1061/7 1083/4</p> <p>let's [25] 964/18 975/15 982/15 982/16 986/11 988/2 989/25 990/18 990/18 990/19 1006/5 1009/16 1010/15 1011/2 1022/4 1029/8 1032/20 1040/25 1052/8 1052/21 1054/3 1054/5 1062/14 1065/4 1075/9</p> <p>lets [1] 1013/13</p> <p>letter [1] 4/8</p> <p>letterhead [1] 1041/12</p> <p>level [5] 1009/4 1035/14 1073/7 1080/6 1081/22</p> <p>light [29] 980/23 981/1 992/18 996/5 1009/16 1013/5 1013/6 1013/9 1013/10 1013/12 1013/17 1013/18 1013/20 1015/5 1015/9 1021/16 1025/2 1026/3 1026/7 1026/11</p>	<p>1026/13 1026/18 1035/25 1042/3 1042/5 1045/20 1045/23 1049/2 1070/15</p> <p>lighting [2] 983/20 1013/11</p> <p>lights [1] 1013/14</p> <p>like [54] 965/5 966/22 969/14 969/15 973/22 974/24 976/3 976/23 978/15 978/24 979/24 984/25 985/2 988/1 995/19 996/21 997/10 997/15 998/7 998/16 998/17 1003/6 1004/14 1008/20 1009/1 1012/4 1013/11 1015/11 1015/21 1016/15 1018/9 1019/25 1021/24 1022/3 1024/15 1025/17 1025/22 1030/23 1032/18 1034/12 1036/3 1036/21 1038/18 1046/22 1049/19 1052/9 1055/16 1063/16 1068/11 1068/12 1075/1 1077/20 1079/6 1080/5</p> <p>likened [1] 1025/12</p> <p>limit [3] 1061/16 1062/4 1081/3</p> <p>limitations [1] 1025/23</p> <p>line [6] 971/6 1013/18 1013/24 1013/24 1013/25 1078/1</p> <p>lined [1] 1003/13</p> <p>lines [1] 1063/21</p> <p>liquid [6] 1030/7 1030/11 1035/24 1036/2 1040/10 1080/12</p> <p>Lisa [1] 2/14</p> <p>list [7] 964/10 965/11 966/14 966/16 967/20 969/3 994/11</p> <p>lists [1] 964/14</p> <p>litany [2] 1008/18 1008/18</p> <p>litter [1] 1051/8</p> <p>literally [1] 1015/14</p> <p>litigation [1] 1033/22</p> <p>little [39] 969/8 974/18 974/19 976/16 977/3 980/18 980/21 980/25 984/25 985/24 986/7 986/15 986/16 987/7 987/12 987/18 1005/13 1009/17 1014/6 1016/6 1016/7 1016/13 1017/24 1017/25 1029/14 1030/23 1031/19 1035/10 1048/17 1052/12 1053/2 1057/13 1058/17 1058/17 1064/22 1066/24 1073/3 1076/3 1083/9</p>

<p>Case 3:16-md-02738-MAS-RLS Document 331-321 Filed 08/23/24 Page 685 of 924</p> <p>L LLC [1] 2/20 LLP [1] 2/13 long [18] 980/15 1000/7 1005/7 1005/15 1005/17 1009/19 1010/21 1016/16 1017/15 1026/18 1050/2 1058/19 1063/18 1065/3 1068/12 1068/12 1074/13 1075/6 longer [1] 1047/2 LONGO [20] 3/6 4/12 964/19 964/22 965/1 965/5 965/25 971/19 973/8 973/13 973/22 996/21 996/21 1023/19 1031/2 1060/2 1067/19 1067/23 1078/16 1078/19 Longo's [4] 4/4 4/5 1070/12 1070/14 look [54] 968/10 975/1 978/22 978/23 982/2 982/4 984/20 984/24 990/3 991/10 993/21 997/15 998/7 999/10 1002/19 1003/13 1005/1 1006/5 1013/14 1015/10 1017/14 1020/12 1027/24 1028/7 1029/7 1036/1 1041/7 1043/2 1046/14 1049/22 1050/1 1056/5 1056/8 1056/15 1056/17 1056/21 1056/21 1057/24 1058/14 1058/14 1060/18 1061/1 1063/8 1063/9 1064/7 1064/12 1064/14 1064/20 1065/3 1068/20 1068/23 1077/6 1081/1 1081/2 looked [21] 984/24 984/25 990/14 995/19 1006/20 1017/22 1023/25 1043/19 1045/8 1051/4 1056/13 1063/14 1065/21 1065/23 1066/12 1066/18 1067/1 1067/7 1073/13 1073/18 1077/17 looking [33] 983/1 993/12 995/7 998/18 999/21 1000/5 1000/8 1000/12 1010/11 1015/7 1015/14 1015/23 1015/23 1016/15 1026/9 1026/19 1026/21 1040/8 1049/13 1049/25 1050/21 1054/15 1055/24 1057/10 1058/19 1059/8 1063/12 1064/8</p>	<p>1064/16 1064/17 1064/24 1065/1 1078/3 looks [7] 978/15 979/23 1004/14 1022/3 1038/18 1049/19 1052/9 losing [1] 1027/2 lost [1] 996/15 lot [29] 976/13 977/12 979/12 983/10 991/23 991/24 992/18 997/25 1004/20 1011/6 1015/18 1024/18 1028/20 1037/13 1048/17 1049/7 1057/9 1058/20 1058/20 1059/14 1059/16 1059/17 1063/17 1065/2 1065/24 1070/3 1074/14 1080/5 1080/21 lots [1] 970/13 LOUIS [5] 1/1 1/24 2/6 2/22 1085/5 low [1] 1081/6 lower [3] 986/24 1008/5 1008/13 lowering [2] 1006/25 1007/24 lowers [2] 1007/18 1008/8 LUCILLE [1] 1/5 luck [2] 1010/25 1017/1 lucky [1] 1019/9 lunch [8] 1016/2 1057/13 1073/22 1073/25 1077/22 1082/16 1082/21 1083/18 lunchtime [1] 973/24 Luzenac [2] 967/4 1007/12</p> <p>M machine [2] 1004/3 1014/20 machines [1] 1014/22 mad [1] 1053/18 made [10] 971/18 975/18 980/12 1018/16 1026/15 1028/13 1030/8 1037/21 1066/7 1066/10 Magee [2] 2/20 1083/14 magnification [5] 1054/16 1054/17 1063/16 1063/18 1064/24 magnifications [1] 1064/18 Magnify [1] 1064/21 mail [1] 977/1 main [1] 1038/17 make [39] 969/6 969/8 969/24 971/5 971/21 972/1 974/3 982/16 986/18 990/18 993/22</p>	<p>995/12 996/14 1001/21 1002/10 1007/3 1009/16 1012/7 1021/21 1028/18 1033/24 1036/2 1046/23 1047/14 1047/19 1050/16 1051/14 1052/22 1053/18 1055/22 1055/23 1058/6 1060/4 1065/11 1066/5 1076/15 1077/9 1080/18 1083/3 makes [4] 983/18 1028/20 1059/14 1062/8 makeup [3] 984/8 984/11 984/13 making [3] 971/19 975/24 1066/2 Malik [1] 2/16 man [2] 984/21 1039/1 manager [1] 1020/19 mandated [1] 1035/14 maneuver [1] 1002/14 manufacture [1] 1072/2 manufacturer [1] 1076/1 manufacturing [1] 980/7 many [22] 965/16 965/16 980/4 988/6 988/15 988/17 988/25 989/4 1019/11 1039/2 1039/2 1039/12 1045/3 1056/17 1057/17 1057/24 1058/8 1061/24 1074/3 1077/4 1078/22 1082/1 March [1] 977/22 March 11th [1] 977/22 Mark [3] 2/8 2/23 978/7 marked [3] 974/23 982/11 989/11 market [1] 993/15 markets [2] 1039/2 1039/13 marking [1] 1011/19 mashed [2] 1002/11 1002/12 MASTER [1] 2/25 material [5] 977/9 1024/15 1025/8 1046/22 1047/11 materials [7] 964/14 1021/9 1025/1 1044/7 1045/10 1046/23 1047/23 math [10] 4/12 987/3 987/23 988/4 988/16 1060/3 1060/11 1073/15 1073/18 1075/16 mathematics [1] 1060/1 Matt [1] 2/18 matter [3] 965/18 1037/25 1082/17</p>	<p>matters [2] 964/16 969/6 may [15] 972/11 973/18 979/12 986/23 986/24 994/9 1021/13 1023/14 1034/24 1041/19 1049/22 1077/21 1079/25 1082/6 1083/13 May 25 [1] 1041/19 maybe [8] 969/12 996/23 1017/20 1019/6 1048/24 1051/18 1052/11 1082/9 McCrone [1] 1045/11 me [35] 964/7 964/15 965/8 975/6 980/17 980/21 988/1 993/22 997/5 1002/23 1006/2 1011/3 1011/16 1016/21 1016/24 1017/1 1017/3 1017/4 1025/15 1025/19 1027/13 1028/11 1028/24 1049/4 1050/3 1050/23 1051/16 1058/9 1058/12 1061/7 1062/8 1078/11 1078/12 1081/25 1082/7 mean [24] 965/6 968/18 969/21 970/11 979/16 995/24 1000/14 1010/6 1011/9 1020/15 1029/4 1031/25 1033/17 1038/20 1039/7 1048/5 1050/17 1051/21 1052/15 1053/5 1058/12 1071/7 1072/1 1080/11 meaning [1] 1040/13 means [11] 969/1 978/16 979/17 995/25 1017/14 1042/17 1053/8 1053/9 1060/19 1060/20 1069/22 meant [1] 1068/7 measurable [1] 1071/8 measure [8] 996/11 1016/20 1024/21 1051/22 1052/2 1052/7 1053/17 1054/21 measured [3] 1075/13 1076/25 1077/4 measurement [1] 986/4 measurements [3] 971/9 984/23 1026/6 measuring [2] 1024/15 1049/22 meatballs [7] 1057/11 1057/11 1057/17 1057/19 1057/20 1057/22 1057/25 mechanics [1] 1071/24 medical [4] 970/3 970/4 970/9 970/12 meet [2] 1031/12 1031/18</p>	<p>meets [1] 1000/7 melting [1] 1025/7 melts [5] 1024/10 1024/16 1024/16 1024/19 1024/20 memo [1] 1033/6 mess [1] 996/22 messed [1] 1012/12 met [1] 1031/15 metadata [2] 1032/13 1033/9 metaphor [1] 1017/20 meter [3] 980/17 980/17 980/18 method [48] 967/2 1001/2 1014/19 1014/19 1015/6 1015/6 1015/7 1015/10 1015/10 1015/13 1016/25 1017/8 1018/18 1025/25 1026/8 1028/4 1031/3 1034/17 1035/12 1035/20 1038/14 1039/17 1041/21 1042/23 1043/11 1045/6 1045/11 1045/11 1045/16 1045/19 1045/21 1049/11 1049/12 1049/24 1056/20 1058/2 1058/8 1059/1 1059/9 1060/11 1061/5 1061/13 1062/17 1080/7 1080/7 1080/13 1081/1 1081/5 methodology [1] 1038/19 methods [3] 1025/4 1025/23 1058/18 metric [1] 986/4 mic [1] 996/21 microgram [2] 1051/8 1051/12 micrograms [1] 1053/12 micrometer [4] 980/21 981/2 1007/14 1007/15 micrometers [5] 980/15 980/16 981/3 981/4 1007/16 microns [1] 980/16 microscale [1] 1008/21 microscope [29] 966/23 966/24 979/3 979/5 992/17 992/20 993/14 993/14 993/18 993/22 993/25 998/4 998/25 999/2 999/17 1013/8 1013/10 1016/16 1036/1 1048/4 1049/16 1053/23 1054/19 1054/20 1055/25 1059/7 1059/7 1060/25 1065/1 microscopes [2] 992/18 1003/7 microscopic [2] 975/19 975/23</p>
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<p>M microscopist [4] 982/5 982/7 1002/14 1059/3 microscopists [1] 980/1 microscopy [24] 993/11 1006/18 1013/5 1013/6 1014/18 1015/5 1015/10 1021/17 1025/3 1025/3 1026/3 1026/4 1026/7 1026/11 1026/13 1026/18 1036/10 1042/3 1042/5 1045/20 1045/24 1049/2 1054/18 1059/1 might [10] 969/12 983/13 1000/12 1020/2 1048/5 1049/19 1050/9 1058/5 1073/24 1081/24 miles [1] 1064/22 mill [1] 1040/21 milled [1] 1021/10 Miller [1] 1043/22 milligram [1] 1059/18 milligrams [2] 1052/14 1059/17 millimeter [3] 980/24 980/25 1049/17 millimeters [1] 1054/22 milling [1] 980/8 million [20] 980/20 985/21 985/23 986/10 986/13 987/7 987/12 987/14 988/20 1005/22 1016/4 1017/10 1061/5 1062/3 1062/11 1062/25 1076/4 1076/9 1076/17 1076/18 millions [1] 1080/8 millionth [1] 980/17 mind [2] 1011/14 1083/3 minds [1] 967/21 mine [12] 992/13 992/20 994/22 1001/9 1040/21 1044/1 1044/3 1044/8 1044/10 1044/19 1044/22 1050/11 mined [1] 993/13 mineral [5] 995/6 999/21 999/24 1000/11 1036/7 minerals [12] 999/25 1006/19 1009/1 1009/2 1026/20 1032/2 1036/3 1039/20 1040/12 1043/14 1043/15 1047/1 mines [3] 1044/11 1044/15 1045/1 minimum [1] 1071/10 mining [3] 1036/5 1040/21 1044/17 minute [1] 1081/9 minutes [7] 985/4</p>	<p>1022/3 1022/5 1022/20 1025/12 1082/21 1083/24 miss [1] 1029/22 missed [1] 972/11 MISSOURI [1] 1/1 mistake [2] 1037/9 1037/10 mistakes [1] 978/18 mix [1] 1029/12 mixed [2] 1002/18 1003/17 MO [3] 2/6 2/22 2/24 modified [1] 1034/3 moment [6] 988/23 992/3 1012/13 1026/1 1047/12 1050/16 moments [1] 1048/18 Monica [1] 2/9 Monica's [1] 978/12 month [4] 991/13 991/13 991/17 1043/2 moon [1] 1029/2 more [30] 969/8 974/20 978/12 992/6 1003/20 1004/5 1010/10 1016/17 1016/17 1017/17 1023/21 1030/20 1033/19 1036/7 1038/6 1043/2 1047/9 1048/15 1048/16 1049/14 1057/5 1057/6 1059/14 1063/8 1063/9 1063/10 1065/6 1073/24 1075/20 1080/21 morning [12] 964/6 972/20 973/19 973/20 974/12 991/1 994/12 994/16 1006/9 1022/4 1022/10 1082/24 Morton [1] 2/15 most [8] 975/12 976/8 1003/9 1014/18 1017/3 1018/21 1028/11 1080/20 mostly [1] 1001/23 motion [1] 971/18 motions [1] 971/19 motive [3] 1002/7 1004/18 1014/15 move [16] 974/25 975/2 977/24 989/25 994/5 996/25 1006/7 1025/25 1027/9 1027/11 1031/4 1036/16 1041/2 1043/4 1053/16 1065/4 movies [1] 976/3 moving [2] 1013/10 1047/9 mr [49] 2/4 2/5 2/5 2/8 2/8 2/14 2/15 2/18 2/23 3/7 964/5 970/8 970/23 972/23 973/21 975/5 977/5 978/14 983/1 990/22 991/1 991/15 992/21 997/4 997/8 1002/3 1005/5 1006/10</p>	<p>1008/2 1012/2 1015/19 1016/24 1023/4 1023/21 1023/23 1023/25 1040/17 1041/16 1042/11 1044/10 1047/22 1048/8 1065/14 1068/13 1069/18 1071/19 1073/8 1078/25 1079/8 Mr. [9] 964/6 965/2 973/17 996/21 1023/13 1037/13 1067/21 1083/14 1083/16 Mr. Ashton [1] 1037/13 Mr. Lanier [5] 964/6 965/2 973/17 1023/13 1083/16 Mr. Lanier's [1] 1067/21 Mr. Longo [1] 996/21 Mr. Magee [1] 1083/14 Ms [10] 2/9 2/9 2/14 2/15 2/16 2/16 2/17 2/17 2/20 2/21 Ms. [2] 1050/3 1082/3 Ms. Cooper [2] 1050/3 1082/3 much [33] 983/22 987/1 987/9 987/10 987/14 987/15 999/5 1002/4 1010/4 1010/25 1012/14 1012/17 1016/18 1016/24 1017/6 1017/12 1017/18 1018/12 1018/14 1026/19 1028/6 1050/23 1051/13 1057/2 1057/4 1059/15 1059/20 1060/14 1060/22 1065/10 1074/3 1076/21 1078/1 multiple [4] 980/5 981/5 982/3 1078/15 multiply [1] 1063/1 museum [2] 1079/9 1079/17 my [23] 964/9 971/2 980/22 983/15 985/24 986/2 987/4 993/22 1005/12 1006/3 1011/10 1017/6 1019/7 1037/9 1037/10 1051/7 1057/4 1057/7 1064/2 1064/10 1070/11 1077/12 1082/13</p>	<p>1016/25 1020/18 1025/22 1028/3 1050/1 1054/5 1058/7 1066/16 1068/20 1083/19 needed [1] 1027/9 needle [12] 1009/25 1010/14 1010/14 1011/2 1011/3 1015/24 1016/3 1016/4 1016/8 1016/12 1020/1 1049/3 needles [22] 1010/18 1010/20 1010/21 1010/21 1010/22 1010/24 1011/6 1011/11 1015/14 1015/16 1017/2 1017/17 1017/23 1028/7 1029/8 1029/10 1029/15 1029/16 1030/23 1035/22 1058/8 1059/10 needs [4] 1023/2 1040/23 1050/14 1050/20 negative [1] 1021/15 never [13] 976/5 1008/3 1008/4 1025/20 1038/1 1044/18 1047/13 1060/16 1061/25 1068/7 1069/25 1072/21 1080/16 new [11] 2/19 966/8 966/17 973/12 976/18 976/22 1020/19 1035/12 1035/19 1036/2 1039/20 next [13] 976/7 982/16 1001/7 1002/20 1002/22 1003/20 1004/19 1012/21 1021/24 1063/22 1065/5 1065/6 1078/17 nice [1] 1054/24 night [2] 1025/11 1064/19 Nina [1] 2/15 nine [1] 1064/21 NIOSH [4] 992/22 1076/20 1076/25 1077/16 no [94] 1/7 964/15 966/19 967/6 967/12 967/17 968/16 968/17 969/5 970/4 970/22 976/25 978/2 978/12 983/10 983/15 983/24 984/2 984/4 984/16 986/1 989/2 989/7 989/19 992/11 992/24 993/20 1001/9 1005/23 1006/4 1008/14 1009/12 1009/23 1010/1 1011/4 1011/13 1011/18 1011/19 1011/20 1012/20 1014/12 1014/14 1015/9 1016/14 1018/23 1020/3</p>	<p>1020/17 1023/5 1026/5 1031/2 1031/7 1031/16 1032/6 1036/17 1037/7 1037/25 1041/4 1042/7 1042/12 1042/18 1043/7 1047/2 1047/13 1048/8 1048/13 1048/21 1051/3 1052/6 1052/17 1053/4 1053/7 1054/9 1056/16 1058/15 1059/14 1060/5 1060/17 1061/15 1061/17 1061/20 1062/13 1064/10 1068/16 1069/15 1072/21 1072/21 1076/16 1079/11 1079/13 1079/14 1080/12 1081/13 1083/15 1085/8 Nobody [1] 980/4 non [3] 1009/2 1019/16 1019/16 non-asbestos [1] 1009/2 non-detective [1] 1019/16 non-quantifiable [1] 1019/16 none [4] 966/3 984/13 1061/21 1061/24 noodles [1] 1057/23 noon [1] 1084/5 noontime [1] 1068/22 normal [2] 1020/10 1028/11 normally [4] 1003/6 1019/8 1049/21 1071/11 NORTON [1] 2/25 nose [1] 1072/20 not [154] not doing [1] 1058/15 notation [1] 1034/11 note [4] 980/12 993/22 1033/25 1050/3 notebook [1] 978/15 notes [1] 1068/23 nother [1] 1073/7 nothing [4] 1011/20 1051/4 1058/25 1058/25 notice [1] 1001/12 now [75] 965/14 967/12 978/25 982/2 982/10 983/1 984/5 984/17 986/17 987/17 989/3 990/1 990/24 995/9 999/9 1003/4 1003/7 1004/6 1005/2 1005/12 1007/3 1011/22 1014/23 1017/11 1017/16 1018/7 1018/16 1019/18 1019/19 1022/1 1025/25 1027/8 1028/24 1033/2 1035/4 1035/19 1037/3 1038/7</p>
		<p>N</p>		
		<p>nails [1] 1030/3 name [2] 1037/13 1078/9 narrate [1] 968/25 naturally [1] 983/18 necessary [1] 1060/12 need [21] 971/1 973/12 973/23 978/6 978/9 978/10 984/10 987/24 993/23 994/3 1016/3</p>		

<p>N now... [37] 1038/11 1038/17 1038/18 1039/24 1040/17 1040/25 1041/7 1041/12 1041/14 1042/11 1043/2 1044/10 1047/12 1050/13 1051/5 1052/1 1053/5 1053/10 1053/19 1053/21 1054/24 1055/6 1057/18 1058/3 1063/7 1063/16 1064/22 1067/11 1067/21 1070/14 1070/21 1071/13 1072/23 1073/13 1074/2 1077/20 1082/15 number [17] 978/7 983/2 987/16 990/3 1014/24 1032/11 1032/15 1041/8 1043/5 1043/22 1054/8 1055/3 1058/14 1069/14 1069/25 1073/14 1078/7 numbers [14] 970/23 971/1 971/6 972/12 1033/6 1033/13 1054/25 1060/19 1068/25 1069/8 1075/14 1077/7 1077/9 1082/12 NY [1] 2/19</p>	<p>offer [1] 991/23 off [24] 975/21 975/2 979/11 981/11 991/4 996/10 998/2 1003/8 1008/19 1009/16 1011/8 1011/15 1016/6 1016/7 1016/13 1024/11 1030/22 1040/16 1061/22 1078/25 1079/1 1079/4 1079/6 1079/7 offer [7] 964/11 966/12 967/13 967/15 989/17 1054/8 1081/10 offered [3] 965/20 966/9 968/24 offering [2] 965/25 970/17 official [2] 1/23 1085/4 officially [1] 1073/24 often [3] 991/2 1018/6 1075/5 oh [6] 968/10 976/11 985/24 997/20 1007/10 1056/13 oil [1] 983/25 OJ [1] 1029/4 okay [61] 968/23 970/11 971/25 972/10 972/19 973/6 973/25 974/20 975/4 978/14 980/3 980/10 981/6 981/21 982/18 984/13 985/12 986/9 987/2 987/17 989/25 990/1 990/2 995/14 996/13 997/18 997/22 997/24 1000/19 1014/4 1014/10 1017/4 1023/1 1028/9 1029/24 1030/25 1032/24 1034/14 1035/12 1040/17 1043/11 1048/19 1052/1 1052/7 1054/14 1057/20 1059/23 1060/18 1061/21 1063/22 1065/7 1067/15 1069/18 1070/23 1074/1 1076/8 1076/19 1077/20 1077/25 1078/4 1082/14 old [3] 983/20 1028/24 1081/1 olive [1] 983/25 omitted [1] 1003/15 on-site [1] 992/13 once [5] 965/7 985/8 1022/19 1045/2 1082/24 one [109] 966/19 969/12 970/16 970/19 972/19 974/17 975/5 975/11 977/5 978/11 979/1 979/2 979/9 980/2 980/16 980/17 980/20 981/4 981/8 981/13 982/4 982/24 982/24 983/8 985/16</p>	<p>985/18 987/18 988/1 988/1 988/21 991/12 995/19 998/17 999/13 1000/9 1001/7 1005/4 1006/6 1007/8 1007/13 1010/3 1010/14 1010/14 1012/3 1013/18 1015/10 1016/6 1016/13 1016/19 1016/22 1016/24 1017/10 1019/9 1019/9 1019/14 1019/22 1023/21 1023/24 1031/22 1032/14 1034/7 1035/6 1035/16 1036/7 1043/2 1043/18 1048/15 1048/15 1050/14 1050/24 1051/7 1051/12 1053/2 1053/18 1054/21 1055/1 1056/7 1056/9 1057/18 1061/2 1061/3 1061/4 1062/10 1063/12 1063/19 1065/6 1070/10 1073/24 1074/17 1074/18 1074/22 1074/23 1074/24 1074/24 1075/18 1075/21 1076/8 1076/11 1076/12 1078/15 1079/8 1079/17 1079/20 1080/3 1080/13 1081/9 1081/12 1082/7 1082/17 one's [2] 972/16 1048/8 one-cigarette [1] 1074/18 one-millionth [1] 980/17 one-thousandth [1] 980/16 ones [10] 971/2 978/17 986/23 1000/2 1012/6 1040/15 1064/3 1066/14 1080/20 1081/21 only [26] 964/16 971/3 971/7 978/11 987/8 987/8 992/5 992/5 998/1 999/14 1011/6 1012/1 1012/2 1012/3 1021/11 1024/2 1025/4 1035/16 1044/8 1044/22 1048/9 1057/19 1059/6 1064/1 1065/16 1080/10 ooh [1] 1001/7 oops [1] 1041/18 open [11] 964/3 973/3 1022/21 1023/9 1029/14 1034/23 1039/19 1052/21 1070/24 1083/3 1083/11 opening [10] 4/11</p>	<p>966/20 1005/5 1023/22 1023/23 1040/18 1056/2 1063/17 1065/2 1065/14 openings [36] 975/7 1029/25 1049/14 1049/20 1049/23 1050/1 1050/2 1050/18 1054/3 1054/4 1055/25 1056/3 1056/4 1056/5 1056/8 1056/10 1056/11 1056/15 1056/19 1056/19 1056/22 1057/7 1058/5 1058/5 1058/19 1059/9 1060/25 1061/1 1061/10 1061/11 1063/8 1063/9 1063/13 1063/14 1063/15 1063/19 operations [1] 1036/5 opinion [13] 966/8 967/4 967/15 968/10 968/11 968/13 968/21 968/24 972/9 983/15 1019/7 1022/15 1082/13 opinions [15] 964/12 965/12 965/15 965/19 965/25 966/9 966/13 966/17 967/13 968/1 972/5 1066/21 1069/20 1070/17 1070/18 opportunity [1] 1070/19 opposed [3] 992/9 1017/1 1042/13 opposing [1] 1081/11 optical [9] 993/11 1013/8 1035/12 1035/20 1036/10 1045/10 1045/19 1048/4 1054/20 orange [4] 1028/10 1028/13 1028/14 1028/21 order [1] 1033/18 Ore [1] 1006/19 original [1] 1032/14 ORRICK [1] 2/13 other [31] 966/5 966/6 967/1 970/16 974/7 976/12 977/5 982/11 983/13 984/5 988/11 1006/5 1009/1 1011/11 1016/15 1018/13 1027/15 1030/7 1038/7 1040/10 1046/25 1047/1 1052/1 1053/18 1054/22 1057/23 1065/12 1068/23 1070/18 1080/11 1082/9 others [4] 966/1 1021/20 1022/13 1040/13 Otherwise [1] 1015/17 ounce [12] 986/5 986/6 986/7 986/12 987/25</p>	<p>987/25 988/2 988/5 988/10 988/14 988/19 1062/7 ounces [1] 988/12 our [38] 966/3 971/19 974/10 974/17 976/1 976/8 979/10 979/22 980/15 981/14 985/20 986/21 987/21 990/25 995/15 999/3 1020/22 1020/22 1022/4 1023/20 1026/12 1028/9 1028/17 1038/17 1041/20 1043/25 1046/20 1047/24 1053/11 1054/19 1056/8 1065/5 1071/13 1075/21 1079/20 1080/2 1080/2 1080/25 out [61] 964/23 965/19 966/18 969/18 972/8 974/9 975/24 976/3 976/5 976/17 978/18 981/8 982/23 987/23 988/18 990/20 991/25 1000/5 1001/14 1004/2 1012/1 1013/13 1015/13 1016/3 1021/9 1021/22 1024/22 1026/23 1029/1 1029/15 1030/4 1030/18 1031/13 1035/25 1036/7 1039/2 1040/14 1050/11 1050/15 1050/22 1050/25 1052/21 1052/22 1055/18 1056/24 1057/22 1058/2 1058/9 1058/12 1059/1 1059/21 1060/1 1064/2 1064/11 1069/1 1075/8 1078/14 1080/1 1082/8 1082/12 1083/25 outside [6] 3/4 964/4 973/10 1022/22 1070/21 1083/12 ovarian [2] 1065/15 1073/9 ovary [1] 1065/18 over [24] 964/9 976/7 976/9 991/11 998/16 998/17 998/20 999/13 1001/25 1002/13 1003/14 1014/24 1033/15 1044/8 1044/17 1044/22 1049/14 1049/15 1057/24 1058/9 1064/12 1064/22 1066/12 1068/21 overall [2] 1006/24 1007/22 overestimated [2] 1006/25 1007/23 overhead [1] 983/2 overlay [1] 1001/25 overload [2] 1059/19</p>
---	--	--	---	--

<p>Q</p> <p>overload... [1] 1059/22</p> <p>overrule [2] 1034/19 1034/22</p> <p>Overruled [5] 993/9 1012/25 1044/14 1047/18 1066/25</p> <p>own [7] 992/16 992/19 1063/22 1070/12 1070/12 1075/10 1083/2</p>	<p>P</p> <p>P.C [2] 2/7 2/10</p> <p>pack [4] 1074/17 1074/17 1074/18 1074/19</p> <p>packaging [1] 1047/23</p> <p>page [17] 3/2 978/24 982/1 991/1 997/18 1005/7 1006/22 1023/23 1032/4 1032/7 1032/10 1032/15 1032/15 1032/19 1034/10 1046/15 1065/17</p> <p>page 199 [2] 978/24 997/18</p> <p>page 223 [1] 982/1</p> <p>page 4 [1] 1006/22</p> <p>page 820 [1] 1005/7</p> <p>page 830 [1] 991/1</p> <p>page 831 [1] 1023/23</p> <p>page 839 [1] 1065/17</p> <p>pages [2] 1032/14 1085/9</p> <p>paid [1] 990/13</p> <p>paper [10] 4/7 976/19 976/20 976/20 1031/5 1031/12 1075/23 1075/24 1076/17 1078/15</p> <p>papers [2] 1077/15 1077/15</p> <p>parameters [2] 1070/20 1083/21</p> <p>part [7] 965/14 966/13 970/24 994/10 1033/14 1034/5 1034/7</p> <p>particle [3] 1003/14 1003/16 1035/16</p> <p>particles [5] 985/7 1004/22 1005/21 1005/22 1017/10</p> <p>particular [12] 975/20 980/14 981/2 986/25 996/8 996/10 1001/7 1014/2 1016/9 1024/15 1039/9 1076/2</p> <p>parties [1] 965/20</p> <p>parts [1] 975/25</p> <p>pass [2] 1073/24 1082/16</p> <p>passed [1] 986/2</p> <p>past [8] 1007/12 1019/5 1049/2 1052/19 1063/13 1065/4 1077/15 1080/22</p>	<p>Patrick [1] 2/5</p> <p>pattern [27] 967/10 995/6 995/16 995/17 995/22 996/11 997/11 997/16 997/21 998/3 999/3 999/9 999/11 999/20 1000/11 1000/17 1001/20 1001/23 1002/17 1002/18 1002/19 1003/4 1003/12 1003/15 1004/11 1004/22 1008/24</p> <p>patterns [3] 998/11 1001/25 1008/21</p> <p>peer [2] 1075/24 1076/17</p> <p>peer-reviewed [2] 1075/24 1076/17</p> <p>pen [1] 1078/16</p> <p>penetrated [1] 976/20</p> <p>pens [1] 1011/19</p> <p>people [17] 977/13 980/2 987/24 989/4 1022/8 1026/21 1033/21 1065/19 1066/2 1068/5 1069/2 1070/4 1071/11 1072/2 1072/13 1072/19 1075/3</p> <p>per [22] 985/21 985/23 986/10 986/12 988/20 1006/13 1030/8 1030/10 1030/12 1030/13 1051/8 1051/12 1056/2 1056/11 1060/15 1074/22 1074/23 1074/24 1076/4 1076/9 1080/8 1082/1</p> <p>percent [22] 1001/3 1012/8 1012/11 1012/18 1012/19 1012/19 1021/8 1021/8 1026/17 1026/24 1027/2 1042/8 1042/19 1042/21 1058/21 1058/21 1058/22 1062/20 1064/8 1064/8 1064/9 1073/4</p> <p>perfectly [1] 1003/12</p> <p>performed [1] 1071/15</p> <p>perhaps [5] 969/19 984/5 984/8 984/9 1073/23</p> <p>period [2] 971/17 1070/3</p> <p>periodically [1] 1064/2</p> <p>permission [1] 996/17</p> <p>permit [2] 1022/13 1045/12</p> <p>persist [1] 994/19</p> <p>person [4] 1011/16 1012/7 1033/18 1074/16</p> <p>personal [1] 967/21</p> <p>pertaining [1] 1027/25</p> <p>pertains [1] 1054/3</p> <p>Peter [1] 2/14</p>	<p>Ph.D [4] 3/6 970/10 973/13 974/22</p> <p>pharmaceutical [3] 1031/6 1031/23 1035/2</p> <p>photograph [6] 4/11 979/3 981/22 981/22 1000/16 1054/17</p> <p>photographs [2] 995/18 997/12</p> <p>photos [1] 1082/10</p> <p>phrasing [1] 1027/21</p> <p>pick [10] 975/15 988/24 1004/19 1009/10 1009/15 1009/17 1009/19 1012/14 1015/21 1056/9</p> <p>picking [1] 982/17</p> <p>picture [4] 981/7 1018/3 1018/3 1054/6</p> <p>pictures [7] 978/23 979/4 981/6 993/23 1049/18 1081/19 1082/8</p> <p>piece [6] 983/23 989/4 1016/6 1016/8 1016/13 1024/15</p> <p>pieces [3] 980/20 1001/1 1001/14</p> <p>Pier [4] 4/6 994/23 995/4 1006/19</p> <p>Pier's [1] 968/11</p> <p>pile [1] 1057/12</p> <p>pill [2] 983/13 989/5</p> <p>pills [1] 983/11</p> <p>pin [3] 1025/13 1025/18 1052/25</p> <p>pinning [1] 1025/21</p> <p>pins [3] 1011/18 1011/19 1011/25</p> <p>place [4] 974/4 999/13 1004/10 1028/16</p> <p>plaintiff [5] 2/3 973/17 1023/3 1023/12 1071/23</p> <p>Plaintiff's [1] 1031/5</p> <p>plaintiffs [14] 1/6 971/2 971/15 971/18 1065/10 1067/8 1067/20 1068/1 1070/2 1071/3 1071/20 1073/15 1074/7 1085/7</p> <p>plaintiffs' [27] 3/4 4/3 974/9 974/23 975/2 977/25 978/8 982/11 989/12 994/6 1006/8 1036/16 1036/18 1036/23 1036/25 1041/3 1041/5 1041/7 1043/5 1043/8 1048/10 1054/8 1059/25 1065/6 1067/11 1073/10 1081/10</p> <p>plane [3] 976/3 976/7 996/10</p> <p>planes [2] 996/9 998/7</p> <p>plastic [1] 1024/17</p> <p>plate [7] 1001/6 1001/13 1001/19</p>	<p>plates [5] 1001/11 1057/1 1057/2 1057/6 1080/24</p> <p>platinum [1] 975/24</p> <p>platy [1] 1001/14</p> <p>play [2] 976/24 1071/13</p> <p>playing [1] 1079/12</p> <p>please [18] 973/5 973/11 973/18 973/19 990/10 990/19 997/6 1003/5 1022/12 1022/17 1023/11 1023/15 1040/25 1072/1 1079/21 1083/1 1083/6 1084/6</p> <p>plenty [1] 1064/1</p> <p>PLM [3] 1013/8 1021/15 1025/22</p> <p>PLT00040 [1] 972/19</p> <p>PLT00073 [1] 972/20</p> <p>PLT01202 [1] 972/17</p> <p>plus [1] 1001/24</p> <p>point [18] 972/4 994/15 997/17 1001/21 1004/3 1008/10 1015/19 1036/11 1036/15 1043/5 1046/17 1052/17 1059/24 1066/25 1067/14 1081/8 1081/10 1082/15</p> <p>pointed [1] 1039/2</p> <p>points [1] 1043/23</p> <p>polarized [22] 992/17 1013/5 1013/6 1013/9 1013/12 1013/17 1013/21 1015/5 1015/9 1021/16 1025/2 1026/3 1026/7 1026/11 1026/13 1026/18 1035/25 1042/3 1042/4 1045/20 1045/23 1049/2</p> <p>polymer [2] 1024/16 1025/8</p> <p>Polymer's [1] 1024/17</p> <p>Pooley [5] 1042/8 1042/12 1042/13 1045/5 1059/12</p> <p>portion [3] 990/6 1028/20 1071/13</p> <p>pose [1] 1047/12</p> <p>position [1] 1063/10</p> <p>positive [9] 1010/3 1010/4 1021/16 1048/13 1051/14 1062/17 1062/19 1080/2 1081/20</p> <p>possibility [1] 1083/7</p> <p>possible [1] 1045/8</p> <p>post [1] 985/18</p> <p>post-1953 [1] 985/18</p> <p>posture [1] 1047/2</p> <p>potentially [1] 1001/3</p> <p>pound [3] 1011/4 1051/19 1051/21</p>	<p>pounds [3] 1009/22 1011/4 1051/18</p> <p>pouring [5] 983/25 1073/2 1073/4 1073/5 1073/5</p> <p>powder [38] 974/4 977/20 981/10 982/16 983/9 983/17 983/17 983/18 984/5 984/6 985/5 985/22 985/24 989/10 990/1 1005/14 1006/2 1043/16 1044/2 1046/17 1046/20 1047/8 1047/25 1048/9 1050/7 1050/10 1050/22 1061/25 1062/23 1063/4 1068/24 1069/1 1072/3 1073/4 1073/6 1078/10 1078/12 1078/20</p> <p>power [1] 975/21</p> <p>practical [1] 1037/25</p> <p>practice [1] 1072/21</p> <p>pre [2] 1041/21 1042/2</p> <p>pre-concentrated [1] 1042/2</p> <p>pre-concentrating [1] 1041/21</p> <p>precise [2] 996/10 999/4</p> <p>precisely [1] 1025/10</p> <p>prep [2] 1006/23 1007/22</p> <p>prepare [2] 1055/4 1060/23</p> <p>prepared [1] 977/16</p> <p>presence [4] 3/4 964/4 1022/22 1083/12</p> <p>present [6] 966/7 1035/23 1046/24 1047/1 1047/20 1085/6</p> <p>presented [2] 964/19 1068/10</p> <p>pressed [2] 1039/3 1039/13</p> <p>pretend [1] 998/14</p> <p>pretty [10] 973/24 975/9 998/9 1010/19 1012/9 1012/17 1020/16 1057/4 1077/4 1077/16</p> <p>Preview [1] 988/23</p> <p>previously [3] 968/1 994/7 1006/14</p> <p>prickly [3] 1005/8 1005/16 1006/3</p> <p>primarily [4] 1001/23 1066/1 1066/3 1076/14</p> <p>prior [3] 994/18 994/19 1006/16</p> <p>prism [1] 996/5</p> <p>probably [6] 976/7 1026/23 1040/9 1045/10 1047/10 1051/19</p> <p>problem [6] 967/6 967/12 967/17 1017/9 1039/20 1058/24</p> <p>problems [1] 1038/17</p>
---	---	--	--	---	---

<p>P</p> <p>procedure [7] 1006/23 1006/23 1007/11 1007/21 1007/22 1008/7 1080/5</p> <p>procedures [3] 1020/10 1038/20 1039/25</p> <p>proceed [1] 1070/25</p> <p>proceedings [13] 3/4 964/3 973/3 1022/21 1023/8 1023/9 1032/23 1034/23 1067/17 1070/24 1083/11 1085/6 1085/10</p> <p>process [7] 968/8 976/22 980/7 1002/15 1003/5 1020/24 1044/17</p> <p>processing [1] 1040/21</p> <p>produce [2] 964/14 970/20</p> <p>produced [10] 965/16 1032/10 1032/13 1033/4 1033/7 1033/7 1033/12 1034/3 1034/6 1073/13</p> <p>product [20] 1005/24 1006/24 1007/12 1007/23 1008/4 1009/12 1021/5 1021/7 1029/6 1046/12 1049/22 1066/3 1070/4 1072/3 1072/7 1072/8 1072/16 1072/22 1075/5 1077/14</p> <p>production [1] 1033/14</p> <p>products [19] 977/21 983/3 984/4 984/5 1020/21 1026/14 1026/22 1026/23 1027/17 1037/17 1038/9 1043/13 1066/1 1066/1 1066/2 1066/5 1072/2 1072/3 1072/14</p> <p>Professional [1] 1085/2</p> <p>proffering [1] 965/13</p> <p>promise [1] 1011/25</p> <p>proposal [4] 1037/18 1037/20 1038/6 1039/19</p> <p>proposals [1] 1038/7</p> <p>proposed [4] 4/9 1041/8 1041/20 1046/23</p> <p>protective [1] 1044/1</p> <p>protocol [2] 1020/11 1060/21</p> <p>protocols [2] 985/10 990/14</p> <p>provided [3] 1033/8 1033/18 1033/23</p> <p>publication [3] 1031/19 1031/20 1031/22</p>	<p>published [3] 1075/23 1076/17 1077/15</p> <p>publishes [1] 1047/10</p> <p>pull [2] 996/17 1021/13</p> <p>pulling [1] 986/18</p> <p>pulp [1] 1028/21</p> <p>punches [1] 986/19</p> <p>purchases [1] 981/13</p> <p>pure [1] 1039/14</p> <p>purity [1] 1039/3</p> <p>purple [1] 1078/16</p> <p>purporting [1] 965/14</p> <p>purpose [8] 965/10 970/18 989/23 1034/9 1034/15 1054/12 1060/8 1081/17</p> <p>purposes [6] 971/8 978/3 978/6 989/20 1054/8 1060/5</p> <p>pursuant [1] 994/16</p> <p>pushing [2] 1030/18 1051/20</p> <p>put [34] 972/13 975/21 975/22 975/22 978/17 980/23 1011/2 1011/10 1011/11 1013/14 1015/11 1016/6 1017/22 1021/7 1026/15 1029/8 1032/4 1049/16 1052/12 1054/5 1055/13 1062/8 1064/1 1066/16 1066/16 1072/5 1072/6 1072/17 1073/10 1078/16 1081/18 1081/21 1082/3 1083/23</p> <p>puts [1] 1013/1</p> <p>putting [5] 1001/17 1003/11 1030/14 1055/15 1072/15</p> <p>Q</p> <p>qualifications [1] 970/6</p> <p>qualified [1] 1037/21</p> <p>quality [1] 1010/19</p> <p>quantifiable [2] 1019/16 1061/17</p> <p>quantification [2] 1068/16 1069/25</p> <p>quantities [1] 1048/3</p> <p>quarter [1] 1083/25</p> <p>question [15] 970/9 970/12 970/22 987/4 987/24 990/6 994/17 1005/12 1005/23 1014/15 1027/9 1027/22 1047/12 1047/17 1078/18</p> <p>questioning [1] 997/11</p> <p>questions [5] 971/8 1044/13 1068/13 1077/25 1078/1</p> <p>quick [3] 1040/8 1046/16 1054/4</p> <p>quickly [1] 1077/21</p> <p>quit [2] 1048/22 1064/7</p> <p>quote [3] 993/7</p>	<p>R</p> <p>R93 [1] 1015/6</p> <p>Rachel [1] 2/9</p> <p>raise [1] 1083/17</p> <p>Raleigh [1] 976/2</p> <p>ran [1] 1019/9</p> <p>range [3] 1012/11 1026/24 1074/8</p> <p>ranges [1] 1074/9</p> <p>rapidly [1] 1047/9</p> <p>ray [11] 999/12 1008/20 1008/20 1009/8 1009/9 1012/13 1025/2 1026/2 1041/22 1042/3 1048/22</p> <p>rays [1] 1008/23</p> <p>RCA [1] 993/15</p> <p>re [3] 3/4 973/12 1007/16</p> <p>Re-analysis [1] 1007/16</p> <p>re-sworn [1] 973/12</p> <p>reach [1] 1081/22</p> <p>read [4] 966/21 966/23 970/21 1031/20</p> <p>readily [1] 1059/11</p> <p>reading [4] 1005/7 1010/3 1010/5 1037/18</p> <p>ready [5] 972/22 973/7 974/12 982/21 1070/25</p> <p>reagents [1] 1039/10</p> <p>real [6] 1040/8 1046/16 1054/4 1064/17 1064/20 1065/2</p> <p>reality [1] 1005/18</p> <p>realize [1] 1032/4</p> <p>really [21] 993/15 1005/15 1012/6 1013/25 1015/21 1016/16 1019/8 1021/4 1026/25 1027/2 1040/3 1045/20 1049/9 1053/17 1058/7 1064/5 1064/6 1069/17 1080/5 1080/15 1081/5</p> <p>reason [6] 968/8 1029/17 1030/17 1034/8 1072/14 1075/21</p> <p>reasonable [3] 965/8 969/11 989/7</p> <p>rebuttal [2] 965/9 1066/17</p> <p>recall [2] 983/3 988/13</p> <p>receive [1] 978/5</p> <p>received [11] 4/3 975/3 989/22 1006/15 1031/9 1036/19 1041/6 1043/8 1054/11 1060/7 1081/16</p> <p>receiving [2] 1074/15 1083/7</p> <p>recess [4] 1023/7 1023/8 1084/4 1084/5</p> <p>recipe [2] 1018/9 1060/22</p> <p>recipes [2] 990/14</p>	<p>reciprocal [1] 999/13</p> <p>recognized [2] 1006/4 1024/25</p> <p>record [12] 968/21 972/13 981/11 987/5 996/20 999/18 1023/2 1033/24 1050/5 1076/5 1083/14 1083/19</p> <p>records [3] 992/8 1007/7 1033/18</p> <p>recreate [1] 972/7</p> <p>red [2] 1002/11 1003/23</p> <p>redid [1] 1067/9</p> <p>reduce [2] 988/4 988/16</p> <p>REFER [1] 1084/6</p> <p>reference [1] 1037/13</p> <p>referenced [2] 966/20 994/2</p> <p>reflect [1] 1007/7</p> <p>regard [7] 975/5 980/10 990/19 1040/17 1064/5 1067/11 1082/14</p> <p>register [4] 1011/8 1011/10 1013/2 1013/3</p> <p>Registered [1] 1085/2</p> <p>regular [4] 977/1 1034/5 1034/7 1065/25</p> <p>regulated [2] 1035/6 1035/13</p> <p>release [1] 980/8</p> <p>relevant [1] 971/14</p> <p>reliable [1] 971/14</p> <p>reliance [8] 964/10 964/14 965/11 966/13 966/16 967/20 969/3 994/11</p> <p>relied [3] 1066/18 1066/23 1070/8</p> <p>rely [6] 965/12 965/14 1021/15 1043/25 1070/12 1070/12</p> <p>remember [12] 986/8 990/21 991/18 999/8 1001/15 1003/10 1007/6 1022/11 1028/24 1044/19 1071/4 1080/14</p> <p>reminds [1] 1082/25</p> <p>remove [3] 1022/17 1057/1 1083/6</p> <p>removing [1] 1028/20</p> <p>report [24] 4/4 4/6 977/16 977/16 977/19 977/20 977/25 978/4 978/16 982/10 984/17 989/10 989/13 989/18 997/14 1004/12 1006/18 1014/17 1019/13 1020/3 1060/16 1061/24 1062/1 1083/7</p> <p>reported [5] 1061/12 1061/15 1062/11 1062/21 1085/6</p> <p>reporter [6] 1/23 3/8</p>	<p>reports [2] 982/12 1078/4</p> <p>represent [1] 966/4</p> <p>representative [2] 1004/16 1070/1</p> <p>reproduction [1] 1085/10</p> <p>request [1] 1037/20</p> <p>requested [1] 1007/12</p> <p>requires [1] 1019/12</p> <p>reroute [1] 975/19</p> <p>rescue [1] 1012/1</p> <p>research [5] 1022/16 1075/19 1080/25 1083/2 1083/5</p> <p>resolution [2] 1027/3 1042/22</p> <p>resources [2] 1074/4 1075/9</p> <p>respect [1] 1034/2</p> <p>respirator [1] 984/22</p> <p>rest [1] 1018/25</p> <p>restart [1] 1011/9</p> <p>restriction [1] 1007/18</p> <p>result [1] 1007/19</p> <p>results [3] 972/6 1020/8 1076/18</p> <p>resumed [2] 999/6 1002/2</p> <p>returned [2] 1034/23 1070/24</p> <p>returns [1] 1077/8</p> <p>reviewed [3] 1067/22 1075/24 1076/17</p> <p>Rex [1] 1/2</p> <p>rid [9] 1015/16 1017/16 1017/16 1017/21 1018/1 1018/14 1028/6 1029/6 1059/20</p> <p>rides [1] 1030/16</p> <p>rigged [5] 974/5 990/1 1014/5 1023/20 1048/16</p> <p>right [106] 967/24 970/14 971/5 973/5 973/8 973/11 974/14 976/13 977/4 977/14 977/15 978/5 978/24 982/10 982/15 982/24 984/15 984/18 988/14 989/9 990/18 992/3 994/1 995/20 996/24 997/19 999/19 1000/9 1001/7 1001/9 1001/10 1002/20 1003/20 1003/22 1005/1 1006/17 1007/7 1007/10 1008/2 1009/5 1009/21 1012/12 1012/19 1015/19 1016/1 1019/1 1021/20 1022/1 1022/8 1022/9 1022/23 1023/1 1023/11 1023/20 1024/18 1027/6 1028/7 1028/11 1029/3 1029/21 1029/24</p>
---	--	--	---	--

<p>R</p> <p>right... [45] 1030/4 1034/9 1035/2 1035/5 1035/17 1037/5 1037/11 1038/21 1040/23 1041/5 1041/16 1042/4 1042/24 1043/21 1045/8 1048/15 1050/3 1050/7 1050/13 1051/24 1051/25 1052/22 1052/25 1057/16 1061/7 1061/13 1061/15 1065/4 1065/14 1066/8 1067/21 1070/21 1071/2 1073/13 1073/20 1075/10 1075/11 1077/10 1078/25 1079/2 1082/6 1082/6 1082/16 1082/20 1083/13 RJ [6] 995/2 995/4 1000/9 1004/6 1005/3 1007/17 road [13] 974/2 974/2 974/10 974/11 974/16 974/17 977/5 982/16 989/25 1048/16 1065/5 1077/23 1077/24 rock [1] 993/13 Roger [1] 1043/21 Rolle [1] 1041/18 room [3] 985/2 992/19 1050/15 rotate [2] 1014/1 1014/1 rotation [1] 1014/3 route [1] 983/12 routine [1] 1020/20 RPR [2] 1/23 1085/16 rule [2] 1053/19 1053/19 rules [3] 965/20 966/15 979/25 ruling [5] 968/19 971/20 994/19 1006/13 1006/16 rulings [1] 994/18 run [8] 985/4 985/5 1016/22 1017/9 1049/7 1049/8 1050/14 1083/22</p> <hr/> <p>S</p> <p>SAED [1] 995/23 safe [1] 1047/1 Safety [1] 1035/15 said [31] 964/7 968/14 970/16 971/7 977/6 979/12 984/14 986/17 988/11 990/22 1004/24 1023/25 1025/17 1026/1 1040/18 1042/12 1042/14 1054/5 1060/22 1061/11 1061/20 1065/15 1068/5</p>	<p>1068/17 1068/21 1069/15 1069/25 1070/8 1071/18 1079/1 1083/21 salad [1] 984/1 salt [1] 1051/3 same [33] 982/8 983/13 984/6 987/17 993/21 994/11 998/3 998/14 998/22 1002/21 1006/11 1010/25 1012/18 1018/8 1025/6 1042/5 1042/14 1042/24 1055/11 1058/3 1061/12 1062/5 1062/14 1064/25 1071/22 1073/11 1073/19 1076/9 1076/13 1078/18 1080/18 1080/19 1080/19 sample [41] 976/4 981/8 982/8 985/3 991/6 1003/6 1003/8 1005/3 1008/22 1012/7 1016/9 1018/11 1024/9 1026/20 1042/20 1045/14 1046/1 1046/9 1046/11 1049/16 1050/22 1050/25 1054/19 1055/5 1055/8 1055/8 1055/9 1055/20 1057/2 1058/16 1058/19 1059/15 1059/16 1059/22 1059/25 1060/23 1061/4 1063/19 1076/2 1079/10 1079/11 samples [18] 979/2 981/10 985/5 991/5 991/12 1000/25 1019/6 1020/12 1026/13 1046/24 1048/13 1053/20 1055/6 1055/6 1057/9 1058/16 1058/21 1081/1 sampling [1] 1052/19 sanding [1] 1072/15 Saran [3] 1055/16 1055/17 1055/18 satisfactory [1] 1047/2 saves [1] 965/8 saw [4] 983/19 990/23 1013/22 1022/7 say [57] 968/10 977/8 977/9 980/3 983/7 986/20 987/10 995/25 1002/6 1003/25 1004/17 1013/2 1014/12 1014/14 1015/1 1017/4 1017/24 1019/24 1020/5 1020/5 1027/8 1038/17 1042/17 1042/17 1044/11 1044/18 1045/19 1050/21 1051/3 1051/6 1051/7 1051/10 1051/10 1051/11 1051/11</p>	<p>1057/3 1057/10 1058/10 1057/16 1061/18 1061/23 1062/1 1062/6 1062/14 1062/19 1063/5 1064/11 1067/21 1068/15 1071/11 1071/22 1072/24 1073/8 1074/19 1076/6 1080/10 1081/4 saying [17] 967/15 968/11 976/25 991/15 991/16 1002/8 1016/25 1017/20 1045/20 1045/21 1045/23 1047/21 1058/6 1061/22 1062/10 1068/12 1069/11 says [10] 964/15 969/1 991/4 1000/10 1006/22 1023/25 1025/7 1039/12 1041/18 1065/18 scale [18] 1009/25 1010/9 1010/10 1010/25 1011/1 1011/3 1011/10 1011/11 1011/14 1011/17 1051/17 1051/17 1052/1 1052/2 1052/17 1052/21 1053/10 1053/16 scales [16] 1009/13 1009/15 1009/17 1010/6 1010/7 1012/4 1012/20 1013/2 1013/3 1014/11 1015/21 1018/25 1027/5 1049/4 1051/17 1053/11 scanning [1] 1025/5 scared [1] 1081/25 scatter [4] 1002/20 1004/20 1013/13 1013/16 scattered [1] 996/8 scenario [5] 986/20 986/22 988/15 1075/15 1075/18 science [7] 974/2 974/16 974/17 977/5 982/15 1008/12 1066/15 scientific [17] 967/7 967/11 967/17 967/18 967/25 968/2 968/20 974/10 994/4 994/17 1006/14 1008/12 1029/17 1039/9 1051/6 1075/24 1077/24 scientist [3] 977/9 1029/23 1076/8 scientists [4] 1005/11 1014/24 1049/12 1063/13 scope [3] 993/6 1037/21 1038/8 screen [2] 1049/20 1049/21 search [1] 1064/23</p>	<p>seat [1] 1022/6 seated [3] 973/5 1023/11 1083/13 second [4] 1/24 964/22 1046/15 1056/9 seconds [1] 985/4 security [1] 976/5 see [80] 964/18 972/9 976/19 978/10 978/14 979/4 980/13 980/23 981/1 982/3 983/17 984/25 985/12 986/11 991/4 991/10 991/13 992/22 992/24 993/18 993/23 996/2 998/2 998/4 998/18 998/19 998/24 999/3 999/14 1000/16 1003/3 1004/2 1005/6 1005/6 1007/1 1007/25 1009/16 1009/21 1010/11 1010/15 1016/16 1016/21 1017/25 1018/6 1018/12 1018/19 1019/15 1020/21 1022/19 1027/3 1032/11 1036/25 1037/8 1037/18 1037/23 1039/5 1039/21 1040/4 1040/19 1041/9 1041/23 1042/9 1042/16 1043/23 1044/3 1044/8 1046/15 1046/18 1047/2 1048/1 1052/23 1053/21 1054/24 1057/5 1057/7 1068/24 1076/12 1081/2 1082/9 1083/9 seeing [8] 979/18 980/11 982/20 1006/2 1013/15 1018/7 1019/8 1021/19 seem [1] 989/7 seems [1] 1077/22 seen [14] 969/10 983/5 983/8 992/8 992/11 992/12 996/4 1013/23 1037/13 1044/25 1056/19 1061/22 1065/12 1072/21 select [1] 1044/11 selected [3] 971/16 995/23 1044/15 Selecting [1] 1040/21 sell [1] 1028/25 Semiconductor [1] 976/11 sense [6] 968/23 996/14 1047/19 1051/15 1055/22 1055/23 sensitive [12] 1010/5 1010/10 1011/1 1011/13 1011/23 1012/13 1014/19 1026/8 1052/10 1053/21 1059/10 1081/5</p>	<p>sensitivities [1] 1058/4 sensitivity [33] 1010/1 1010/2 1012/10 1016/18 1016/24 1017/4 1017/7 1017/18 1019/10 1025/24 1027/4 1040/5 1042/21 1049/8 1049/25 1050/17 1050/19 1051/2 1051/7 1051/13 1051/22 1052/3 1052/7 1052/20 1053/10 1059/6 1060/2 1061/2 1063/7 1080/2 1080/3 1080/6 1081/22 sensitivity's [1] 1027/9 sent [3] 973/10 981/10 1079/2 sentence [4] 995/9 997/9 1002/22 1004/19 separate [5] 1001/2 1030/4 1036/7 1038/2 1040/12 separated [1] 1028/5 separating [1] 1021/22 separation [13] 1030/25 1031/2 1036/2 1036/13 1037/22 1038/8 1038/11 1038/19 1039/4 1039/8 1039/14 1040/10 1045/24 series [1] 1035/9 Serpentine [1] 1006/18 session [1] 1023/11 set [7] 1011/14 1011/16 1020/3 1020/5 1033/11 1053/14 1078/2 Seth [1] 2/5 seven [1] 1072/10 Shaila [1] 2/17 shake [1] 1075/10 shaking [3] 1072/9 1072/17 1072/19 sharper [1] 1029/4 Shasha [1] 2/17 she [24] 990/25 1003/2 1003/2 1003/3 1003/4 1004/16 1006/22 1013/22 1031/18 1031/19 1031/22 1035/21 1035/22 1035/25 1036/1 1036/9 1042/2 1042/3 1045/18 1045/18 1078/10 1078/12 1078/14 1082/6 she's [5] 1002/23 1031/17 1035/19 1050/3 1082/7 sheet [6] 974/7 979/10 995/15 997/4 1014/8 1050/15 shelf [3] 1079/4 1079/6 1079/7 Shelley [1] 1041/16 sheriff [3] 1022/9 1082/23 1083/8</p>
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<p>S shift [3] 991/8 991/11 1005/4 shoe [1] 1072/15 SHOOK [1] 2/23 shoots [1] 979/6 shot [1] 1017/23 should [15] 964/25 965/21 967/16 968/5 968/7 975/1 983/14 1014/15 1032/17 1043/25 1051/19 1052/10 1058/13 1064/12 1076/6 shoulder [1] 985/1 shouldn't [2] 978/4 989/21 show [11] 967/2 993/7 997/8 997/10 1000/20 1004/8 1004/11 1006/6 1010/15 1036/21 1052/18 showed [3] 997/18 1018/3 1078/6 Shower [2] 977/21 977/21 showing [5] 983/22 995/19 997/13 997/17 1020/18 shown [2] 992/23 993/3 shows [7] 997/16 1002/15 1002/15 1007/4 1033/9 1034/3 1052/22 shredded [1] 977/3 side [6] 966/5 966/7 998/19 999/2 1053/18 1082/8 sidebar [4] 1032/20 1070/22 1073/23 1083/21 sides [2] 966/15 1029/19 sight [1] 976/6 significant [14] 1068/5 1068/7 1068/8 1068/9 1068/16 1068/18 1069/21 1071/6 1071/20 1073/1 1074/7 1077/10 1077/14 1082/12 similar [3] 1075/25 1076/10 1076/18 simple [3] 965/18 990/20 1029/7 simply [2] 989/18 1024/9 Simpson [1] 2/14 since [2] 993/7 1067/22 single [3] 979/18 980/9 991/7 sink [1] 1040/15 sinks [1] 1030/14 sir [66] 973/11 975/10 977/18 977/23 978/17 978/21 981/17 982/9</p>	<p>982/19 984/16 988/9 988/22 990/23 993/7 994/21 994/24 1006/17 1007/2 1008/1 1014/22 1023/16 1031/11 1031/16 1035/1 1036/24 1037/2 1037/19 1037/24 1038/13 1038/22 1039/6 1039/22 1039/24 1040/20 1042/6 1042/10 1043/12 1043/20 1043/24 1044/5 1044/9 1045/7 1045/15 1045/18 1046/7 1046/10 1047/4 1047/12 1048/10 1048/20 1052/17 1054/2 1056/12 1056/23 1062/24 1063/2 1065/8 1065/13 1071/2 1072/25 1073/12 1078/5 1079/19 1081/15 1082/14 1082/18 sit [1] 1029/13 site [1] 992/13 sitting [2] 985/1 985/2 situation [1] 1022/18 six [4] 1019/19 1039/10 1057/20 1072/10 size [9] 988/11 989/1 1000/8 1005/18 1005/23 1029/18 1033/13 1035/17 1054/22 sizes [1] 1021/12 skeptical [1] 1004/17 skew [1] 1020/8 skin [3] 1005/8 1005/15 1006/3 slice [2] 980/25 981/1 slices [1] 993/12 slide [4] 983/2 1015/12 1017/11 1030/17 small [11] 987/18 1009/24 1021/11 1049/4 1049/20 1049/21 1050/22 1050/25 1053/2 1063/17 1065/2 smarter [1] 977/1 smell [1] 992/10 smoke [1] 969/22 smokes [2] 969/23 1074/17 so [238] soap [1] 984/3 sold [1] 993/14 solidifies [1] 1024/20 some [62] 971/16 974/6 975/7 975/9 987/3 987/24 990/20 992/6 993/11 994/3 994/23 995/11 996/2 996/3 1001/5 1001/12 1001/24 1001/25</p>	<p>1002/12 1002/18 1003/16 1006/5 1008/15 1018/1 1018/7 1020/11 1021/20 1026/20 1028/16 1028/22 1030/7 1035/8 1036/11 1040/13 1041/8 1045/11 1049/18 1050/14 1051/22 1052/2 1052/7 1052/17 1054/3 1063/13 1065/9 1065/12 1065/20 1071/11 1071/13 1075/3 1075/9 1076/19 1077/25 1078/25 1079/1 1079/2 1079/4 1079/7 1080/22 1082/8 1082/9 1082/10 somebody [2] 1025/7 1047/21 someone [3] 1040/3 1068/11 1069/11 something [36] 964/5 964/19 967/19 967/20 969/15 969/21 975/21 975/22 975/22 979/15 983/25 998/20 1004/11 1008/5 1009/24 1015/8 1015/20 1020/21 1024/3 1024/19 1025/6 1026/1 1026/11 1027/12 1027/16 1028/3 1029/9 1029/14 1031/1 1031/17 1038/21 1038/23 1040/8 1046/15 1076/10 1082/3 something's [2] 1033/16 1051/23 sometimes [3] 1004/21 1020/1 1053/20 somewhat [1] 1007/19 somewhere [2] 985/19 1049/18 soon [1] 1040/13 sophisticated [2] 1046/22 1049/20 sorry [6] 969/16 1022/7 1022/25 1032/3 1034/21 1043/1 sort [9] 979/23 1002/21 1036/2 1039/11 1042/2 1052/22 1055/23 1075/1 1077/12 sounds [1] 1080/4 space [2] 999/13 999/14 spaghetti [6] 1057/11 1057/12 1057/18 1057/20 1057/21 1057/22 speak [1] 969/17 SPECIAL [1] 2/25 specially [1] 1053/15 specialties [1] 977/14 specific [2] 1014/25 1075/21 specifically [4]</p>	<p>1026/15 1032/9 1036/9 1068/5 specifications [2] 4/9 1041/8 specs [1] 1041/20 spend [1] 1063/19 spin [1] 1030/16 split [3] 975/21 1022/3 1056/7 spot [1] 1003/11 spread [4] 1004/1 1058/2 1058/8 1059/21 sprinkle [3] 989/6 1006/1 1072/4 sprinkled [1] 983/11 sprinkling [1] 983/18 squared [1] 1029/19 squares [1] 1054/24 squeeze [1] 1004/5 Squiggly [1] 1063/21 squish [2] 1029/25 1030/1 ST [5] 1/1 1/24 2/6 2/22 1085/5 stacked [3] 981/5 1018/12 1055/21 stage [2] 1003/3 1014/1 stamp [2] 1032/11 1033/6 stand [10] 970/4 997/7 999/6 1000/24 1002/2 1011/16 1030/16 1066/16 1070/15 1079/21 standard [8] 985/9 998/9 1012/9 1025/1 1047/10 1058/15 1058/18 1080/7 standards [1] 1008/25 standing [2] 984/21 1022/8 start [16] 990/19 999/19 1003/8 1003/16 1003/19 1008/19 1010/13 1011/15 1013/15 1016/15 1018/8 1027/1 1057/5 1060/22 1075/10 1078/8 started [3] 973/7 1031/13 1083/24 starting [2] 997/16 1059/16 starts [3] 1004/6 1020/17 1027/2 state [3] 1/1 1012/6 1026/6 state-of-the-art [2] 1012/6 1026/6 stated [3] 1069/20 1070/18 1077/19 statements [1] 1008/6 states [4] 975/14 1035/18 1038/10 1046/2 statistically [2] 1016/22 1019/9 statistics [1] 1076/19</p>	<p>stay [1] 1004/19 stayed [1] 990/25 step [6] 964/23 1007/3 1022/23 1040/19 1040/23 1061/7 steps [1] 980/13 stick [2] 1011/5 1064/4 sticking [3] 979/20 1001/14 1053/1 still [14] 964/9 975/18 980/23 1014/10 1017/25 1018/1 1028/25 1043/10 1052/7 1072/23 1073/1 1073/21 1074/12 1081/3 stipulation [4] 970/21 971/3 972/2 972/5 stood [1] 1023/8 stop [13] 974/3 974/15 974/17 982/16 990/18 1012/22 1014/7 1014/9 1023/20 1048/16 1065/5 1065/6 1077/24 stopped [1] 996/3 stops [1] 1065/6 straight [2] 1011/19 1013/13 Street [1] 2/18 strength [2] 1004/4 1059/4 strike [1] 1003/16 string [1] 1068/12 strips [1] 977/3 structure [1] 981/5 structure's [1] 1061/17 structures [6] 979/18 988/19 996/7 1008/24 1062/3 1062/13 studies [6] 992/22 993/7 1065/20 1073/8 1073/10 1078/3 study [6] 985/3 1069/16 1075/24 1076/3 1076/23 1076/25 stuff [10] 969/24 991/3 1001/16 1013/1 1020/22 1029/22 1035/5 1036/6 1073/19 1074/13 sub [1] 1048/3 sub-trace [1] 1048/3 subject [6] 994/18 1006/16 1021/24 1022/5 1069/22 1082/22 subjective [1] 1065/23 substantiate [1] 981/23 such [7] 964/11 966/14 1002/21 1003/18 1010/7 1053/25 1067/20 sudden [3] 1004/12 1013/15 1057/6 sugar [5] 1018/9 1018/10 1029/17 1029/18 1029/18</p>
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<p>S suggest [1] 989/8 suggesting [1] 1014/13 Suite [1] 2/21 summary [1] 1073/14 sun [1] 1013/12 sunblock [1] 984/3 super [1] 1048/25 Supplemental [1] 977/20 supplied [1] 1079/1 support [1] 966/10 supporting [2] 1039/3 1039/13 supposed [2] 1001/22 1001/24 supposedly [1] 968/9 sure [20] 969/7 969/8 969/25 971/5 971/19 971/21 986/18 993/10 995/12 996/19 1000/22 1007/3 1009/19 1046/23 1050/16 1060/4 1077/4 1077/9 1080/13 1083/20 surface [1] 1064/24 surprise [3] 965/23 966/7 966/10 surprised [2] 1018/21 1018/23 surprising [1] 1080/23 surrogate [1] 990/6 surrogates [1] 990/4 sustained [4] 990/10 1008/11 1027/22 1038/5 SUTCLIFFE [1] 2/13 swear [1] 1058/11 sweep [1] 1016/2 switch [2] 999/2 999/10 sworn [2] 973/12 973/14 symmetry [1] 1035/9 system [2] 986/5 1042/23</p>	<p>1029/14 1030/22 1032/20 1050/22 1052/21 1053/2 1057/21 1061/7 1068/25 1070/21 1072/3 taken [5] 978/23 981/23 991/12 1056/24 1060/10 takes [6] 1013/12 1017/15 1050/2 1063/18 1064/23 1065/2 taking [10] 983/6 985/3 989/5 1001/16 1016/7 1016/13 1050/25 1072/8 1072/19 1073/6 talc [106] 977/21 979/2 983/3 983/6 983/14 984/11 991/4 991/8 992/22 992/23 993/3 1001/1 1001/2 1001/5 1001/6 1001/6 1001/10 1001/11 1001/13 1001/14 1001/18 1001/24 1002/12 1002/13 1002/16 1002/17 1002/20 1003/3 1003/16 1003/20 1004/8 1005/9 1005/10 1005/20 1005/22 1008/3 1015/11 1015/13 1017/9 1017/10 1017/12 1017/16 1017/19 1017/25 1018/4 1018/7 1018/10 1018/12 1018/14 1019/6 1021/9 1021/10 1021/11 1024/23 1027/13 1027/17 1030/6 1030/12 1030/21 1035/12 1035/25 1036/9 1037/14 1037/23 1038/1 1039/20 1040/4 1040/18 1041/9 1041/20 1042/8 1042/12 1042/18 1043/14 1043/15 1045/13 1045/25 1046/9 1046/11 1047/1 1047/11 1047/13 1047/14 1047/14 1047/23 1047/24 1047/25 1050/21 1057/1 1057/1 1057/2 1057/3 1057/6 1057/8 1057/8 1059/15 1059/20 1059/20 1061/4 1061/6 1076/1 1076/9 1076/9 1080/16 1080/18 1080/24 talc/asbestos [1] 1037/14 talcs [8] 1031/6 1031/23 1035/3 1035/14 1035/16 1039/2 1039/12</p>	<p>1047/23 talcum [2] 983/17 984/6 talk [16] 967/18 968/2 970/5 974/5 974/8 979/15 990/1 1028/3 1048/17 1050/17 1054/1 1065/19 1067/23 1069/13 1073/23 1083/4 talked [13] 965/4 976/16 977/6 1011/22 1014/25 1021/20 1022/11 1023/22 1023/24 1028/4 1031/18 1035/24 1069/22 talking [12] 994/25 995/11 1000/17 1007/18 1018/25 1040/5 1043/10 1043/14 1046/17 1050/6 1050/18 1058/23 talks [3] 967/1 1006/22 1039/23 Tang [2] 1028/24 1029/3 tangy [1] 1029/3 taste [3] 1029/1 1029/4 1029/23 teach [1] 995/17 tear [1] 1010/12 technical [1] 1006/18 technique [12] 988/23 1006/4 1024/24 1026/19 1035/19 1036/8 1040/12 1042/5 1045/9 1049/7 1049/12 1049/13 techniques [12] 1006/5 1024/2 1025/1 1026/25 1028/5 1039/5 1039/15 1039/16 1040/5 1045/12 1046/6 1046/22 techs [1] 1053/18 tell [29] 975/17 991/2 991/20 992/2 998/12 1003/24 1008/15 1009/2 1009/3 1011/3 1011/18 1019/3 1019/11 1021/17 1025/9 1025/18 1025/18 1025/21 1042/13 1051/23 1054/14 1056/17 1057/18 1059/5 1074/6 1074/12 1075/22 1076/23 1079/8 telling [2] 1014/20 1025/16 tells [1] 1048/8 TEM [31] 966/23 966/24 967/8 967/9 968/8 992/1 993/25 995/22 995/25 1008/21 1015/10 1015/20 1015/20 1017/12</p>	<p>1017/15 1018/17 1019/2 1019/5 1023/25 1025/22 1048/18 1049/4 1049/13 1054/17 1055/6 1055/6 1057/3 1057/4 1060/11 1063/8 1080/7 temperature [2] 1024/21 1025/7 temperatures [1] 1025/10 temporary [3] 1023/6 1023/8 1084/3 tenth [7] 987/14 987/15 1027/1 1051/18 1051/19 1051/21 1059/18 tenths [1] 1052/10 term [8] 979/10 979/12 995/15 1039/9 1068/11 1071/3 1071/5 1071/7 termed [2] 1068/8 1077/24 terms [6] 966/16 970/12 974/6 994/4 995/12 1069/24 test [42] 985/17 990/16 991/2 991/25 995/2 1005/2 1006/2 1007/9 1008/16 1009/6 1009/10 1010/5 1012/2 1014/5 1014/25 1015/5 1017/22 1018/15 1023/21 1023/25 1024/25 1030/22 1034/18 1035/23 1037/4 1037/7 1038/11 1039/10 1040/3 1040/23 1048/16 1051/14 1063/10 1069/7 1069/7 1069/8 1069/10 1075/10 1075/10 1075/21 1078/19 1079/22 tested [8] 987/4 1005/10 1020/25 1021/1 1040/19 1044/16 1078/10 1081/19 testified [7] 966/1 966/24 967/3 973/14 993/1 1077/10 1077/12 testify [4] 968/1 1069/19 1070/16 1070/18 testimony [3] 984/10 1033/21 1070/6 testing [15] 4/5 988/23 989/18 990/14 991/6 991/20 992/7 992/14 994/1 994/23 995/1 1000/9 1023/19 1066/19 1067/3 tests [20] 974/5 990/1 990/4 990/19 991/17 991/23 991/23 991/24 992/9 993/24 1005/2 1008/18 1014/8 1023/21 1023/24</p>	<p>1024/18 1044/16 1050/6 1061/22 1078/15 Texas [1] 971/2 than [23] 969/8 976/12 977/1 980/18 1003/20 1007/13 1019/7 1026/17 1026/17 1027/16 1030/2 1033/19 1038/7 1040/11 1040/13 1047/9 1048/11 1051/12 1053/9 1058/24 1059/16 1072/7 1076/3 thank [25] 968/22 972/25 974/1 974/13 975/4 989/16 989/24 994/20 999/5 1000/23 1002/1 1023/10 1023/14 1031/10 1032/21 1034/24 1036/19 1043/9 1054/13 1055/23 1060/9 1071/1 1082/19 1083/9 1084/1 thanks [3] 1022/10 1022/19 1082/24 that [624] that's [144] their [51] 965/4 965/7 976/6 989/5 989/6 990/4 990/14 990/15 990/16 990/16 992/1 992/16 992/19 995/1 995/2 1008/4 1011/15 1014/8 1019/6 1019/10 1020/6 1020/9 1020/25 1024/23 1033/5 1033/5 1034/5 1034/7 1040/3 1040/4 1049/8 1053/22 1058/8 1059/9 1059/18 1060/21 1060/22 1061/2 1061/5 1061/8 1061/20 1061/20 1066/6 1072/5 1072/5 1072/6 1072/20 1072/25 1074/8 1074/9 1076/3 them [42] 964/12 965/18 965/25 966/6 969/3 972/15 974/6 974/7 975/13 975/16 975/17 979/9 980/23 985/8 985/9 985/25 986/1 988/24 1000/10 1013/14 1019/12 1032/14 1033/4 1039/10 1039/11 1040/16 1049/9 1054/1 1056/6 1062/15 1062/16 1064/3 1064/4 1064/6 1064/7 1064/15 1065/3 1066/2 1078/25 1079/8 1080/1 1081/20 themselves [1] 1072/4 themselves [4] 968/5 990/12 1072/17 1072/20</p>
<p>T table [4] 966/21 966/22 1057/22 1057/24 tables [2] 1053/14 1053/15 tablet [2] 996/17 996/25 tail [2] 1025/13 1025/18 take [40] 971/9 979/4 980/19 980/22 980/25 984/20 984/23 991/8 991/10 992/18 998/11 1001/20 1002/17 1004/1 1007/3 1009/16 1010/6 1010/9 1010/24 1013/10 1015/11 1016/6 1020/8 1020/13 1022/1 1022/4 1024/11 1028/6 1028/25</p>				

<p>T then [67] 968/25 972/7 972/8 974/4 974/9 978/18 980/7 981/3 982/15 985/5 986/24 987/9 987/12 988/10 990/15 992/21 996/25 997/19 999/2 1000/1 1000/12 1003/11 1004/12 1005/1 1008/7 1008/25 1013/5 1014/1 1014/7 1014/12 1014/16 1014/18 1017/14 1017/21 1018/24 1024/20 1027/2 1027/8 1028/7 1028/21 1029/13 1030/21 1034/13 1035/25 1040/14 1042/18 1042/24 1047/20 1054/25 1055/1 1055/11 1055/17 1058/13 1058/13 1060/14 1061/1 1064/14 1065/18 1066/17 1067/23 1068/1 1069/21 1075/7 1077/4 1077/9 1080/23 1084/2</p> <p>there [115] 969/19 970/1 970/13 975/13 982/11 984/22 996/7 997/15 998/23 999/1 999/11 999/16 1001/3 1001/5 1001/8 1001/21 1001/24 1002/14 1003/25 1004/20 1008/24 1009/3 1009/17 1010/4 1010/7 1011/2 1011/6 1011/9 1011/11 1011/12 1011/18 1011/18 1011/19 1011/20 1011/20 1014/7 1014/10 1015/13 1016/3 1016/7 1016/19 1016/20 1016/21 1016/24 1017/6 1017/12 1017/17 1017/22 1017/25 1018/12 1018/13 1018/16 1019/8 1019/13 1019/21 1019/24 1021/12 1025/2 1027/3 1028/22 1028/22 1029/8 1029/13 1030/1 1037/8 1037/25 1039/2 1039/12 1042/12 1047/20 1047/21 1048/1 1048/14 1049/3 1049/16 1050/23 1051/4 1051/10 1051/11 1051/11 1051/14 1051/20 1052/8 1053/5 1054/24 1055/19 1055/21 1057/4 1057/6 1057/12</p>	<p>1057/17 1057/25 1058/18 1059/2 1059/5 1059/15 1059/21 1060/15 1060/20 1061/3 1061/5 1061/7 1062/6 1062/15 1069/17 1071/22 1073/5 1075/20 1075/23 1076/21 1076/24 1079/21 1080/13 1080/24 1081/4</p> <p>there's [34] 972/14 977/2 980/3 993/11 1003/24 1005/22 1006/12 1008/3 1008/3 1009/19 1011/3 1011/20 1016/23 1017/5 1017/10 1019/18 1020/4 1021/12 1024/22 1029/15 1030/17 1033/21 1035/9 1044/18 1047/13 1047/13 1048/15 1051/4 1053/5 1055/14 1058/24 1058/25 1061/17 1071/25</p> <p>therefore [1] 965/13</p> <p>thermal [4] 1024/4 1024/5 1024/8 1066/4</p> <p>these [87] 964/10 964/20 965/3 965/5 965/13 965/22 966/1 966/9 966/10 966/17 966/18 967/18 967/21 967/24 968/2 968/6 968/9 968/19 968/24 969/7 972/23 979/22 979/25 980/6 980/8 981/6 988/25 990/19 993/23 996/4 996/6 996/8 998/6 998/11 998/20 1000/25 1001/13 1003/7 1005/13 1005/14 1005/18 1005/24 1013/10 1015/15 1021/2 1021/8 1023/19 1023/24 1024/2 1025/1 1025/1 1026/5 1026/14 1026/15 1026/25 1028/4 1032/14 1033/22 1037/14 1039/25 1047/1 1047/23 1048/4 1049/10 1050/6 1053/14 1053/15 1053/20 1054/24 1058/16 1058/18 1064/17 1066/11 1066/13 1067/8 1068/1 1068/5 1069/2 1070/4 1071/20 1073/14 1074/3 1077/13 1077/13 1081/1 1081/20 1082/12</p> <p>they [167]</p> <p>they'd [3] 976/6</p>	<p>1008/18 1042/18 1051/15 966/5 1019/6 1019/12 1020/2 1062/6</p> <p>they're [41] 966/7 984/7 989/1 993/12 993/24 998/14 1000/5 1002/6 1002/9 1004/15 1005/8 1013/25 1014/13 1017/17 1020/5 1020/7 1021/9 1027/17 1039/14 1044/21 1045/19 1045/21 1045/23 1049/10 1050/7 1058/15 1059/9 1059/16 1059/20 1061/22 1061/23 1066/1 1072/14 1072/15 1072/23 1072/25 1073/1 1073/1 1075/6 1077/10 1081/3</p> <p>they've [3] 1020/3 1033/12 1063/14</p> <p>thick [2] 978/15 1055/14</p> <p>thin [3] 1055/16 1055/20 1057/5</p> <p>thing [16] 974/14 976/8 977/5 995/5 1002/21 1006/1 1008/8 1008/8 1009/5 1010/25 1025/6 1039/11 1052/12 1064/25 1073/25 1080/13</p> <p>things [21] 970/13 975/6 975/12 976/12 978/24 981/23 990/20 990/22 996/22 997/25 1001/16 1009/1 1010/7 1016/15 1026/15 1027/24 1033/23 1053/14 1057/19 1061/18 1067/7</p> <p>think [42] 964/16 965/21 968/7 969/7 969/11 971/12 971/14 971/18 972/12 972/14 973/9 975/20 981/11 983/22 985/4 986/7 991/16 994/14 996/25 1006/12 1007/7 1028/11 1029/8 1029/17 1031/17 1032/16 1034/8 1049/18 1051/16 1055/15 1061/16 1067/14 1073/2 1074/16 1076/4 1077/5 1078/23 1079/13 1079/25 1079/25 1080/23 1081/20</p> <p>think's [1] 1026/2</p> <p>thinking [6] 967/14 969/12 970/12 1029/24 1043/3 1044/25</p> <p>thinks [1] 968/25</p> <p>third [2] 972/20 1023/24</p> <p>this [288]</p>	<p>Thomas [1] 2/20</p> <p>thoroughly [3] 1020/25 1021/1 1049/6</p> <p>those [55] 965/20 966/5 966/7 966/13 969/2 970/19 971/1 972/8 972/12 979/20 980/13 980/20 983/10 984/4 985/6 985/8 992/2 992/4 992/8 995/13 996/2 997/12 998/23 1000/2 1005/8 1008/6 1010/20 1010/24 1014/22 1018/14 1019/21 1025/3 1025/22 1029/8 1030/3 1030/15 1030/15 1039/15 1053/25 1055/19 1057/6 1057/7 1057/22 1059/12 1062/2 1062/10 1064/13 1066/5 1066/14 1066/19 1067/1 1068/13 1071/15 1077/7 1081/23</p> <p>though [5] 1001/2 1005/19 1012/3 1019/10 1076/16</p> <p>thought [5] 971/7 977/2 1027/12 1058/11 1083/16</p> <p>thousand [6] 991/12 1016/4 1044/17 1050/1 1058/5 1063/14</p> <p>thousands [6] 991/16 991/17 992/1 992/9 1026/13 1044/16</p> <p>thousandth [1] 980/16</p> <p>thousandths [1] 1052/11</p> <p>three [18] 964/7 965/22 971/1 971/1 972/14 972/15 979/20 1001/17 1008/19 1010/21 1014/25 1019/6 1021/2 1024/2 1029/19 1039/10 1039/11 1052/9</p> <p>threshold [1] 1020/4</p> <p>through [27] 968/5 978/22 978/23 980/24 981/21 996/3 998/19 998/23 1013/19 1015/12 1015/17 1018/19 1020/21 1031/18 1045/4 1046/14 1053/17 1055/14 1057/5 1060/3 1060/11 1065/10 1067/9 1073/22 1075/14 1082/9 1083/22</p> <p>throughout [2] 992/2 1064/3</p> <p>throw [2] 974/6 1058/12</p> <p>throwing [2] 1072/9 1072/9</p>	<p>thrust [1] 1046/20</p> <p>riff [1] 1033/12</p> <p>tighter [1] 1007/18</p> <p>till [1] 1022/10</p> <p>tilt [15] 966/21 967/8 967/9 1002/21 1003/3 1003/7 1003/8 1003/13 1003/13 1003/14 1003/18 1004/9 1004/22 1005/3 1018/25</p> <p>tilting [3] 966/22 968/8 1004/6</p> <p>time [26] 971/17 972/9 976/13 982/13 985/6 998/3 998/22 1016/16 1017/15 1018/22 1019/9 1021/25 1036/11 1041/1 1043/6 1050/2 1056/15 1063/18 1063/22 1065/3 1066/15 1070/3 1074/1 1074/13 1078/2 1081/9</p> <p>times [15] 980/8 981/1 1018/24 1039/2 1045/3 1048/24 1056/1 1058/21 1058/24 1063/1 1063/16 1064/22 1065/1 1071/10 1072/10</p> <p>tissue [1] 1055/9</p> <p>tissues [1] 1038/9</p> <p>tobacco [1] 970/1</p> <p>today [5] 964/8 973/12 1012/6 1026/12 1049/15</p> <p>together [7] 979/20 980/23 981/5 1055/20 1081/18 1082/3 1083/23</p> <p>token [5] 987/17 993/21 1062/5 1062/14 1071/22</p> <p>told [13] 976/14 981/12 981/14 983/2 992/6 992/21 1002/23 1020/24 1040/17 1042/11 1075/13 1078/10 1078/12</p> <p>too [6] 1001/1 1018/6 1052/23 1055/13 1059/15 1059/20</p> <p>took [8] 981/6 983/20 985/8 994/12 1012/1 1069/16 1070/2 1082/10</p> <p>top [10] 1001/13 1001/19 1002/18 1018/4 1018/12 1030/21 1040/16 1055/16 1057/23 1061/3</p> <p>touch [1] 1057/17</p> <p>touched [2] 1032/19 1079/14</p> <p>touching [2] 982/4 1079/12</p> <p>trace [8] 1009/4</p>
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<p>T trace... [7] 1009/11 1015/15 1016/11 1021/6 1048/3 1049/10 1058/16 track [1] 1055/3 transcript [2] 1/14 990/25 transitional [2] 995/8 1000/13 transmission [13] 979/3 992/16 992/19 993/13 993/25 1025/3 1026/3 1049/15 1053/23 1054/18 1059/1 1060/24 1064/25 Treasury [2] 976/12 976/15 tremolite [44] 979/1 979/13 980/11 981/16 981/16 982/6 1002/24 1002/24 1003/2 1003/25 1005/13 1005/14 1009/1 1012/15 1012/17 1019/15 1019/15 1019/18 1019/20 1020/2 1020/15 1020/20 1020/22 1030/13 1035/8 1035/9 1042/8 1042/15 1042/19 1042/22 1045/13 1045/25 1046/8 1047/24 1048/3 1048/6 1061/8 1061/23 1062/16 1062/19 1062/22 1076/15 1080/19 1081/5 trial [2] 1/14 974/8 trick [4] 1000/15 1002/3 1002/4 1055/14 tricky [1] 980/2 tried [4] 980/2 1044/10 1044/11 1069/2 trouble [1] 1058/10 Trovato [1] 2/15 true [2] 1037/11 1085/10 truly [2] 995/8 1000/13 truth [3] 974/10 990/22 1077/25 try [13] 967/12 970/6 997/5 999/9 1011/25 1014/12 1027/16 1057/1 1069/1 1070/14 1075/5 1083/4 1083/23 trying [11] 991/2 1000/5 1015/24 1038/2 1044/17 1049/3 1065/9 1067/8 1067/21 1073/21 1082/5 tube [5] 1018/15 1030/19 1030/21 1030/23 1035/23 Tucker [1] 2/6 tuned [1] 1039/23 turn [1] 1013/21</p>	<p>twenty [3] 1/24 976/18 976/24 twenty-dollar [2] 976/18 976/24 TWENTY-SECOND [1] 1/24 twice [1] 1045/2 two [18] 964/8 969/6 971/1 972/12 979/18 979/19 982/23 998/14 999/8 1010/18 1014/25 1015/9 1015/19 1019/6 1056/8 1057/19 1065/6 1082/22 TX [1] 2/11 Tyndall [1] 983/20 type [20] 969/24 975/19 983/12 983/13 1000/3 1005/23 1014/2 1019/14 1021/5 1021/14 1036/7 1039/10 1042/8 1042/15 1042/19 1044/7 1061/13 1066/5 1072/6 1076/13 typed [1] 990/24 types [3] 976/12 979/18 1005/2 typical [4] 1021/7 1035/17 1054/17 1077/1 typically [10] 980/6 983/16 1012/10 1012/22 1021/18 1028/19 1035/8 1062/13 1062/18 1062/21</p> <hr/> <p>U U.S [3] 976/2 976/11 976/15 Uh [1] 1036/20 Uh-huh [1] 1036/20 ultrasophisticated [3] 1039/4 1039/7 1039/14 unacceptable [1] 1020/19 unauthenticated [1] 1033/25 under [9] 966/23 967/8 967/9 993/15 1035/13 1046/17 1053/22 1062/16 1072/6 underneath [1] 1003/12 understand [17] 971/20 983/7 995/9 995/13 995/14 997/9 999/15 1007/4 1018/8 1026/10 1049/9 1050/16 1067/21 1069/24 1070/23 1074/13 1082/5 understanding [3] 977/4 1070/11 1073/22 understood [1] 1083/20 underwear [1] 1072/5 unit [1] 986/4</p>	<p>United [1] 975/14 units [1] 1010/16 unknown [1] 1026/20 unless [6] 983/10 997/5 1016/9 1029/25 1062/18 1083/18 until [9] 990/25 993/16 998/4 998/20 998/24 1003/3 1022/11 1082/22 1083/1 up [72] 969/17 971/23 974/6 980/13 982/17 983/11 984/14 985/1 985/24 988/25 990/24 990/25 992/18 994/12 996/22 1000/20 1000/21 1001/19 1004/19 1009/11 1009/15 1009/17 1009/20 1012/12 1012/12 1012/14 1013/18 1013/24 1014/1 1015/21 1016/2 1017/13 1017/22 1020/18 1022/9 1024/9 1025/2 1025/9 1028/20 1029/12 1029/14 1030/8 1030/16 1031/1 1032/20 1033/11 1037/4 1038/7 1038/17 1038/23 1039/19 1043/3 1048/11 1050/1 1052/22 1053/1 1053/15 1054/6 1054/25 1055/21 1055/25 1056/7 1057/8 1059/6 1059/12 1063/25 1070/21 1074/10 1078/23 1079/21 1079/25 1080/18 upon [9] 971/2 983/5 987/6 987/16 1066/19 1066/23 1068/13 1070/8 1073/11 upstairs [5] 972/21 973/6 1022/5 1022/20 1082/22 us [34] 975/11 976/14 979/12 981/10 981/14 982/17 992/6 995/14 995/17 999/19 999/22 1003/24 1004/23 1010/10 1014/20 1018/3 1025/17 1025/18 1028/16 1032/11 1033/4 1033/7 1033/12 1034/3 1034/6 1051/23 1053/8 1056/10 1056/10 1060/18 1060/19 1060/20 1074/8 1082/21 usage [1] 971/17 use [42] 968/9 971/13 974/7 984/13 985/16 988/3 1001/2 1007/9 1011/17 1011/22 1012/7 1014/18</p>	<p>1014/21 1017/20 1018/17 1025/6 1025/14 1025/19 1026/8 1026/21 1027/16 1030/9 1030/19 1036/6 1045/17 1045/23 1046/6 1049/11 1049/24 1050/9 1051/16 1052/1 1054/9 1054/20 1072/2 1072/13 1073/6 1074/4 1075/9 1075/25 1077/17 1078/16 used [42] 966/5 966/6 967/24 968/20 968/20 972/7 978/3 979/11 987/3 987/8 988/24 989/20 1007/11 1018/8 1018/17 1021/1 1024/2 1024/3 1024/18 1025/2 1034/15 1034/17 1034/18 1035/25 1036/9 1039/16 1042/3 1042/13 1043/15 1057/10 1068/24 1069/9 1069/20 1071/3 1075/14 1075/21 1076/1 1076/2 1076/11 1076/11 1076/17 1076/18 useful [4] 975/2 997/18 1024/22 1024/24 usefulness [1] 1044/7 uses [4] 1008/7 1015/20 1047/23 1068/11 using [35] 971/7 984/6 985/9 987/1 989/1 995/2 1008/25 1011/1 1018/9 1020/7 1020/23 1021/21 1026/2 1030/6 1030/19 1035/12 1035/24 1036/12 1042/3 1049/4 1049/10 1057/13 1059/5 1059/17 1059/18 1061/5 1066/3 1070/4 1072/7 1072/14 1075/5 1075/6 1076/21 1077/14 1080/12 usually [1] 1026/16 utilizes [2] 1006/23 1007/21</p> <hr/> <p>V Valeant [1] 977/21 variables [2] 972/6 972/8 variation [1] 1045/11 various [1] 1082/12 varying [1] 1047/24 vat [2] 1029/12 1029/14 verified [6] 1066/12 1067/7 1067/22 1073/17 1073/19 1077/18 verify [3] 992/3 992/6</p>	<p>1071/15 Vermont [12] 992/22 992/23 993/3 1008/3 1042/9 1042/12 1042/16 1042/19 1043/15 1044/19 1045/1 1048/9 Vernon [1] 1043/22 versus [1] 990/22 very [30] 969/17 983/18 999/4 999/25 999/25 1004/17 1006/15 1014/23 1021/11 1024/24 1025/9 1026/2 1026/19 1031/8 1036/18 1044/3 1049/9 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1020/11 1021/17 1022/9 1023/6 1026/21</p>
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Exhibit 15

**IN THE CIRCUIT COURT OF THE CITY OF ST. LOUIS
STATE OF MISSOURI
The Honorable Rex M. Burlison, Judge**

GAIL LUCILLE INGHAM, ET AL.,)

Plaintiffs,)

vs.)

JOHNSON & JOHNSON, ET AL.,)

Defendants.)

Cause No. 1522-CC10417-01

TRANSCRIPT OF MOTION HEARING

May 29, 2018

**JENNIFER A. DUNN, RPR, CCR #485
OFFICIAL COURT REPORTER
CITY OF ST. LOUIS CIRCUIT COURT
TWENTY-SECOND JUDICIAL CIRCUIT
jdunncourts@yahoo.com**

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1 (The following proceedings were had in open
2 court:)

3 THE COURT: Let's go on the record In Cause
4 number 1522-CC010417-01, Ingham versus Johnson & Johnson.

5 Is there an announcement on behalf of the
6 plaintiff here?

7 MR. LANIER: Plaintiffs are ready, your
8 Honor.

9 THE COURT: Okay. On behalf of the
10 defendant?

11 MR. BICKS: Defendants are ready, your Honor.

12 THE COURT: Okay. So, there is not everybody
13 here?

14 MR. HEGARTY: Who are we missing, your Honor?

15 THE COURT: Well, Prost, for one.

16 MR. LANIER: Your Honor, we have non-suited
17 Imerys in this case, and I've put that on the record
18 confidentially with Ms. Dunn.

19 THE COURT: And Johnson & Johnson's aware of
20 this?

21 MR. HEGARTY: Yes, your Honor.

22 THE COURT: Okay.

23 MR. LANIER: We're streamlining.

24 THE COURT: Anything I should know about the
25 terms of the settlement with regard to, what is it, 537?

1 argument. If we've got any replies, your Honor, as long as
2 we can get the replies in by the following Monday, we'll
3 work the weekend.

4 THE COURT: How about Thursday for you and
5 Friday?

6 MR. LANIER: Works great, Judge.

7 MS. BAUER: That's fine.

8 MR. LANIER: Thank you, your Honor.

9 THE COURT: Just give me a second here.

10 MS. BARNARD: Alyssa Barnard for the Johnson
11 & Johnson entities. I'll be arguing motions to exclude
12 Dr. Longo and Dr. Madigan's testing.

13 THE COURT: It's Alyssa Barnard?

14 MS. BARNARD: B-A-R-N-A-R-D. I'll first
15 address Dr. Longo. Dr. Longo is a material scientist, who
16 tested 35 containers purporting to be Johnson & Johnson
17 products. And three actually that were not manufactured by
18 Johnson & Johnson, and he purports to have found asbestos in
19 approximately 19 out of the 35 samples that he tested.

20 Dr. Longo's analysis was relied on by Dr. Madigan,
21 who performed a statistical analysis of those results.

22 Your Honor, I'd like to begin by first handing up
23 a brief demonstrative setting out Dr. Longo's results, if I
24 may approach.

25 THE COURT: Yes, ma'am. Thank you.

1 MS. BARNARD: Your Honor, there are three
2 primary issues with Dr. Longo's testing that bear on
3 reliability and require the exclusion of his testing
4 evidence.

5 First, the samples he tested are unauthenticated,
6 and there are serious demonstrable risks of contamination.
7 Second, he failed to properly identify asbestos. And,
8 third, he improperly extrapolates his findings to the
9 broader population of the containers that he would have
10 tested based on sheer speculation.

11 On the first authentication issue. Missouri law
12 requires that experts base their opinions on reliable facts
13 and data. With respect to physical evidence, authentication
14 is a necessary component of reliability. And here, as you
15 can see from this chart, many of the samples are 50, 60, 70
16 years old.

17 They were manufactured before the 1950's, in the
18 end of the post-World War II era, and they purchased, many
19 of them, on eBay by various plaintiffs' lawyers. We have no
20 idea how they were handled, how they were stored, how many
21 hands they went through between manufacturing and today.

22 Other of the samples were obtained from clients
23 involved in the cosmetic talc litigation. And a handful of
24 samples, four, were purchased off the shelf by Dr. Longo and
25 by the plaintiffs' lawyers who provided the samples to him.

1 Now, there is not chain of custody for the vast
2 majority of these samples, as I mentioned before. And this
3 poses two serious risks.

4 First is a potential risk of product replacement.
5 This is addressed in our briefing. I won't belabor this
6 here. The more fundamental problem is a contamination
7 issue. Looking on the demonstrative chart that I provided.

8 Four of the samples Dr. Longo tested, Dr. Longo
9 found richterite in those samples. Richterite is different
10 than the other minerals that are at issue here. Richterite,
11 as Dr. Longo has acknowledged, was a component in insulation
12 materials. Hundreds of thousands of tons of richterite were
13 installed in homes around the country in the 1970s in
14 insulation and other asbestos-containing products.

15 Richterite is not alleged or known to be in any
16 talc mine that Johnson & Johnson sourced its talc from.
17 There is absolutely no explanation for the richterite to be
18 in the samples, other than post-manufacture contamination,
19 that they were sitting in someone's home or someone's office
20 building that contained richterite in insulation or other
21 household items, and that somehow or another these
22 microscopic richterite fibers got into these containers.

23 Plaintiffs do not address this issue in
24 opposition. They have absolutely no response and no
25 explanation, other than contamination for the richterite

1 ending up in these samples. So we know at least four of
2 Dr. Longo's samples are contaminated after manufacture with
3 minerals not found in Johnson & Johnson's talc mines.

4 On the other hand, we have four off-the-shelf
5 samples that Dr. Longo tested. They were sealed, they were
6 purchased at the store. All of those samples tested
7 negative for what Dr. Longo would call asbestos fibers.

8 So when we have demonstrated chain of custody, we
9 have no asbestos fibers. And interestingly enough, that
10 actually holds true with respect to other Plaintiffs'
11 experts in other cosmetic talc litigation. One
12 Dr. Fitzgerald similarly has not found asbestiform materials
13 in sealed off-the-shelf products.

14 But the containers without chain of custody
15 information have what Dr. Longo would call asbestos in them.
16 This serious demonstrated contamination requires the
17 exclusion of Dr. Longo's analysis.

18 Second, very briefly. My colleague, Ms. Trovato,
19 touched on the identification issue. I would like to
20 address it very briefly here only because Dr. Longo's
21 analysis is somewhat distinct from Dr. Compton's analysis.

22 He relies on a different source for the same
23 definition of asbestos. So Dr. Longo purports to rely on
24 the Asbestos Hazard Emergency Response Act definition of
25 asbestos. That's often called AHERA, you'll see that in a

1 lot of the briefing. And the EPA regulations promulgating
2 and enacting AHERA.

3 For all of Plaintiffs' insistence that this
4 asbestiform issue -- this asbestiform question is a
5 geological and not a regulatory question is just false. If
6 I could approach with a copy of the AHERA.

7 Your Honor, this is an excerpt of the AHERA Act as
8 enacted by Congress. If you turn to the second page.
9 Section 202 defines asbestos as the asbestiform varieties of
10 a number of minerals. That's about halfway down the page.
11 Section 202.3. Asbestos.

12 So that is the AHERA definition of asbestos.
13 Asbestiform varieties of the enumerated minerals. And that
14 definition is consistent throughout the regulatory field.
15 That is the federal regulatory definition of asbestos that
16 appears in a variety of regulatory locations that are
17 pointed to you in the brief, but one other -- one other
18 place that I would point your Honor. If I may approach.

19 Your Honor, these are additional federal -- this
20 is a portion of the Federal Register promulgated by the Mine
21 Safety and Health Administration, and on the first page in
22 Subsection 5 here is a discussion of the MSHA definition of
23 asbestos, which similarly and very fulsomely explains it is
24 limited to asbestiform minerals. And here, sort of above
25 the list of bullet points, it specifically says that

1 non-asbestiform minerals are excluded from the regulatory
2 definition of asbestos.

3 So the distinction that Plaintiffs are attempting
4 to draw between the regulatory and geological definitions of
5 asbestos doesn't exist. The regulatory definitions on which
6 Dr. Longo purports to rely define asbestos as asbestiform
7 minerals.

8 And Dr. Longo has conceded on numerous occasions
9 that his analysis does not distinguish between fibers of
10 asbestiform and non-asbestiform minerals. To the extent
11 that Dr. Longo does not distinguish between asbestiform and
12 non-asbestiform minerals, he cannot call his results
13 asbestos under the federal regulatory regime on which he
14 relies.

15 I'd like to turn now to the question of
16 extrapolation. On the demonstrative exhibit that we handed
17 up, on the far right column is what's a fibers per gram
18 column. Dr. Longo analyzed very small portions of talcum
19 powder. He counted identifiable, quantifiable numbers of
20 fibers. Most of the samples he tested contain very low
21 numbers of fibers; one or two. One outlier sample contained
22 101 fiber.

23 And Dr. Longo, in this chart and testimony,
24 extrapolates that to how many fibers of asbestos would be in
25 a gram of talcum powder, and then based on that how many

1 fibers of asbestos would be in a bottle of talcum powder.

2 At best, Dr. Longo's calculation, his
3 extrapolation, is sheer speculation. It's founded on an
4 assumption that whatever contamination he purported to find
5 in the sample that he conducted exists consistently
6 throughout this entire model.

7 Again, this is entirely unfounded at best. And in
8 actuality, his assumption is refuted by his own testing.
9 The vast majority of the samples that Dr. Longo tested were
10 containers. He only tested a single sample from each
11 container, but the last two items on this list, Dr. Longo
12 conducted two different samples from the same bottle of 1978
13 talc taken from Vermont.

14 And he found different levels of alleged amphibole
15 material in those two samples he confirmed the same
16 container, which is proof that there is no basis for
17 Dr. Longo's assumption underlying these eye popping,
18 frankly, calculations on the right-hand column.

19 If there is no basis to believe, for example, that
20 with the first sample Dr. Longo found 101 fibers in the
21 sample that he tested. If there is no basis for Dr. Longo
22 to believe that there are 101 asbestos fibers in every
23 single microgram of that bottle of talc, which there is not,
24 then there is no basis for him to opine that there's
25 15 million fibers per gram, or, you know, a billion fibers

1 per bottle.

2 I'd like to focus on one more issue with Dr. Longo
3 in addition to the sample testing. Dr. Longo did analysis
4 purporting to measure how much amphibole material someone
5 applying talc would be exposed to inhaling the talc. And he
6 used the first sample on this chart in that analysis.

7 As you can tell from looking at the various
8 findings of Dr. Longo, this is an extreme outlier. This
9 sample found, he calculated 15 million fibers per gram.
10 That is more than double the numbers of fibers per gram in
11 every other sample if you count them up. It is more than 30
12 times the average fibers per gram in a sample.

13 And choosing an outlier sample to inflate the
14 results is obviously an impermissible methodology not
15 permitted under Missouri law.

16 Accompanying this video is a -- excuse me.
17 Accompanying Dr. Longo's report on this is a video of him
18 applying talc to himself wearing an oversized respirator
19 that resembles a gas mask, while -- with Tyndall lighting,
20 which makes the dust in the room appear more visible.

21 This video is utterly unhelpful to the jury.
22 There's no question about how individuals apply talc to
23 themselves. Instead, this is intended to elicit an emotional
24 response from the jury. The reaction to seeing a roomful of
25 talc dust and a man in a gas mask is unduly prejudicial to

1 the defendants.

2 Your Honor, would it be better to address Madigan
3 now or to wait until after we've gone back and forth?

4 THE COURT: Let's finish Longo here. Thank
5 you. Mr. Lanier.

6 MR. LANIER: Thank you, Judge. I'll try to
7 argue as quickly as I can.

8 This is, again, as Mr. Cirsch pointed out on the
9 last expert, this is a rodeo we've been in before.

10 Dr. Longo's been challenged by Johnson & Johnson
11 in the last three mesothelioma cases, I believe, that were
12 tried. And, obviously, the judge allowed Dr. Longo to
13 testify.

14 Your Honor, I'm not suggesting that those judges
15 have any precedential value to you, you make your own
16 opinions, obviously. And we're here glad to make the case
17 to you, just to let you know that the arguments have been
18 made before.

19 First, she gave three arguments. Number one,
20 unauthenticated. I think if I'm understanding the argument
21 right, this would only be appropriate for testing if
22 Dr. Longo himself was there when it came off the assembly
23 line at the Johnson & Johnson plant, and took it 50, 40, 30,
24 20 years ago, because he's done this over those decades, and
25 held onto it until now.

1 That's not what happened. Some of them were taken
2 from the possession of the plaintiffs in this case. Some of
3 them were taken off of the shelves of the stores by
4 Dr. Longo. Some were taken off of eBay because it's the
5 best way to get ahold of older products in the older tins
6 that are still collectible.

7 What Ms. Barnard failed to tell you is there was
8 also some that was done -- produced by the museum of Johnson
9 & Johnson, where Johnson & Johnson had to open up their
10 museum and let some of the ones in their custody be tested
11 as well. And asbestos was found in the Johnson & Johnson
12 possession also.

13 That certainly goes to weight. He can be
14 cross-examined on that. But the idea that he can't testify
15 because he didn't physically take it off the assembly line,
16 I think's improper. Especially when you consider that the
17 contamination that's there is very realistic with what was
18 being found in the mines and what are the concerns that the
19 companies had to start with.

20 And so her first idea that it's unauthenticated, I
21 think, frankly is a side issue. The second idea that he
22 didn't properly identify asbestos because he didn't use what
23 they believe the AHERA definition to be.

24 Judge, there is going to be a massive semantic
25 argument that is set forward in this jury where the company

1 argues some geologic terms, and they say that this mineral
2 in this incarnation or form will cause disease if it's
3 shaped in one manner, but not if it's shaped in another
4 manner.

5 And so if it's an aspect ratio of 3-to-1, yeah,
6 maybe it causes disease. 2.99 to 1, no, it doesn't. But
7 then they've got another asbestiform standard that says not
8 3-to-1, it says 5-to-1. And then there's another one that
9 says 20-to-1, and then there is another one that says I
10 think even 100-to-1.

11 These definitions are all over the place. What is
12 asbestiform, what is not asbestiform, is not a consistent
13 thing at all. And what is a geologic term used by one
14 person is not always used by another person in the same way.

15 And it's not a question of the safety and the
16 health anyway, these are geologic terms. And so we've got
17 the doctors that will testify, and we've got Dr. Longo, who
18 will testify that he has found asbestos in these -- asbestos
19 fibers in these mines. I mean, in these products. He's not
20 the only one.

21 Dr. Alice Blount, who was an expert for Johnson &
22 Johnson back in the day. She pulled it off the shelves, she
23 found asbestos in it as well. She uses the same terms.
24 They don't use her as an expert any more. And she is
25 subject to another motion because now they don't want her

1 tests to come in either.

2 But he's properly identified it as asbestos. He
3 calls it that. They don't call it that I think is the
4 problem because they've played the word games to try to
5 disassociate themselves from the health hazards.

6 Her third argument is the improper extrapolation.
7 This does bleed over into Dr. Madigan, who is the
8 statistician a little bit, but I'll leave that argument for
9 later, but to say these are his extrapolations. This is
10 what it is. They want to fuss about it.

11 They want to say, hey, isn't it possible that the
12 other gram had more, or the other gram had less? Well, yes,
13 you can argue that point. And that would go to weight. But
14 all he's saying here is based upon the amount that I tested
15 and the amount of fibers I found in the entire bottle, if
16 that carries out true, here's how much would be in that
17 bottle.

18 Here's how much would be dusting on the people and
19 be shaken out on the people, inhaled and taken internally.
20 So that's -- this all goes to weight. It doesn't go to
21 admissibility.

22 And as to the video that she threw in at the end.
23 The video is extremely important. I think jurors don't
24 understand how this works. The video has got what's called
25 Tyndall lighting. And at least in our age, we remember

1 those movie theaters before it was all digital, and you
2 could look up and see the projection and the dust in the
3 air, that's Tyndall lighting. And they do that so they can
4 show how much dust is created in the process of either
5 putting it on yourself or dusting a baby, and he did both
6 and then measured the air as well and showed this.

7 And so it's a very direct demonstration in a way
8 that a jury can best understand. And, of course, he's
9 wearing a mask. He's not going to inhale the asbestos. If
10 he didn't wear a mask they'd be impeaching him for that. So
11 it's all due and proper, and an extremely important way to
12 illustrate how dusty this process is for the person that's
13 using the baby powder. Thank you, your Honor.

14 THE COURT: How long is that video?

15 MR. LANIER: Two minutes. We can cut it down
16 even beyond that. It's not a long video, Judge.

17 THE COURT: And what's the -- what is the
18 biological mechanism that your case relies on?

19 MR. LANIER: We've got two, your Honor. We
20 show peritoneal migration. In other words, if you put it in
21 the genital openings, near the genital openings, it can
22 migrate through the genital tract.

23 But even more important is the inhalation.
24 Because once it's inhaled, the asbestos fibers being so
25 infinitesimally small almost, they'll go down into the very

1 deepest alveolar sacs within the lungs and they'll migrate
2 into the lymph system and the blood system.

3 So one of the studies, for example, that I've used
4 in the depositions that most clearly show this, is one where
5 the doctors took stillborn babies from mothers. And
6 dissection and path examination of the stillborn babies are
7 able to find asbestos fibers that not only had migrated
8 through the mom's lungs, but even transplacental and carried
9 into the placenta.

10 And so it's the inhalation, but it's also the
11 peritoneal applications. Thank you, your Honor.

12 THE COURT: And that video would be as to the
13 inhalation?

14 MR. LANIER: Yes, your Honor. Yes, your
15 Honor. Thank you.

16 THE COURT: All right.

17 MS. BARNARD: Very briefly, your Honor. And
18 I'll begin with the video.

19 As Mr. Lanier stated, the lighting, the Tyndall
20 lighting that's used in the video makes the dust appear very
21 prominently. And that's exactly why this is prejudicial
22 because the dust that appears in the video is the talc dust.

23 The video does not allow you to aggregate and to
24 show whether or not there's asbestos. And, obviously, the
25 vast majority, even according to Plaintiffs, of the contents

1 of a bottle of cosmetic talcum powder are dust.

2 So encouraging the jury to conflate talc dust with
3 asbestos talc is exactly what's prejudicial about the video.
4 And Mr. Lanier's statements about the utility of showing the
5 jury the dust suggests that that's exactly the confusion
6 that the video is intended to elicit.

7 THE COURT: If it's talc dust or asbestos
8 dust.

9 MS. BARNARD: Your Honor, talc and asbestos
10 are not the same thing. And the inhalation theory appears
11 to rely on the contamination of asbestos, but when the jury
12 sees the video and sees the dust, the implication is that
13 all of that dust is asbestos, which is not the case. And
14 again, the video is actually --

15 THE COURT: In the case, what I'm trying to
16 focus in on is I thought that the plaintiff -- their case is
17 based on talc and asbestos.

18 MS. BARNARD: Your Honor, my understanding of
19 what Mr. Lanier just said is that the inhalation aspect of
20 the case is -- is predicated on asbestos. I don't believe
21 that the inhalation component of the case is focused on
22 talc.

23 I think that the only inhalation component is
24 focused on asbestos getting in somehow to the ovaries. I
25 believe that's what Mr. Lanier just said.

1 And for precisely these reasons, because of the
2 gas mask, for example, I mean, it's just simply because of
3 the minimal relevance, Dr. Longo has done calculations, we
4 think that those calculations are unreliable to the extent
5 they're allowed in.

6 The video is not necessary to allow Dr. Longo to
7 explain to the jury what his calculations are. The video is
8 prejudicial, and it has been excluded in other
9 jurisdictions, as we point out in the brief.

10 More fundamentally to Mr. Lanier's point that
11 these are all questions of weight. They are not. Missouri
12 law is very clear that unfounded assumptions, unfounded
13 speculation, unfounded hypotheses are not admissible under
14 Missouri law.

15 You cannot ask an expert to opine on a hypothesis,
16 or to predicate his testimony on an assumption that
17 something is true if there is no basis in the record to
18 believe that it is true. Here not only is there no basis in
19 the record to believe that Dr. Longo's various hypotheses
20 are true, they're actually contradicted by the record making
21 them inadmissible under Missouri law.

22 On the authentication point. Our position is not
23 that Dr. Longo needed to personally observe every container
24 when it came off the manufacturing line, but what we need is
25 a chain of custody. Affidavits from the individuals while

1 the bottles were in their possession, indicating did they
2 replace it with something. Where did they keep it? How
3 long did they have it? Where did it come from? When did
4 they buy it, for example.

5 We don't have any of that. They haven't presented
6 affidavits. We don't even have affidavits from -- some
7 other plaintiffs' firms got these bottles from their own
8 clients. We don't even have affidavits from their clients.
9 We don't have affidavits from almost no one, who was the
10 source of these samples.

11 And again, Mr. Lanier did not respond to the
12 richterite contamination point because there is no response.
13 The only explanation for richterite in Dr. Longo's sample is
14 contamination, which is to the jury unreliable and not the
15 proper basis for expert testimony. Thank you, your Honor.

16 MR. LANIER: If I could real quick. We don't
17 agree that richterite's a contaminate from some outside
18 source. They've certainly found richterite in various
19 mines. And we believe that richterite is something that
20 could absolutely be found in the talc mines. We're not
21 going to argue anything other than that.

22 As for the dust issues with the video and the
23 confusions. I want to be candid with the Court. Some
24 courts have not let in the video. Other courts have let in
25 the videos. I've been able to play the videos before. But

1 I know that other lawyers have both played them and not
2 played them. It all depends upon the judge and it all
3 depends upon the jurisdiction.

4 I think they're absolutely critical videos, and I
5 do think the jury needs to understand, and I'll be
6 explaining it. They certainly can cross-examine the jury.
7 This is showing all of the dust. It's not simply isolating
8 out the asbestos. The asbestos is microscopic.

9 But it shows you how easy it is to be exposed
10 through inhalation when you are using the products in the
11 way they are designed to be used. When you combine that
12 with someone like one of our plaintiffs' slides show the
13 asbestos surrounded by platy talc in the pathology slide,
14 you understand that it's inhaling that stuff, that the
15 asbestos doesn't seemingly disaggregate from the talc when
16 it's in the air.

17 I don't think anybody's going to contend
18 necessarily that it does, that it must. So I think that's
19 absolutely critical evidence for the jury to understand how
20 dusty this truly is as a process, and how easily it is
21 inhaled, and how absurd it is to think that the human body's
22 not going to be inhaling some of the asbestos when you do
23 this process. Thank you, Judge.

24 THE COURT: All right. Anything further,
25 Ms. Barnard?

1 MS. BARNARD: No, your Honor.

2 THE COURT: All right. We'll take that under
3 advisement. All right. We'll go to lunch.

4 MR. MAGEE: I got two pro hacks.

5 THE COURT: Pick this up about 2 o'clock. Is
6 that fine for everyone?

7 (Court was held in recess for the noon hour,
8 after which the following proceedings were had in open
9 court:)

10 THE COURT: All right. We're back on the
11 record in Cause Number 1522-CC10417-01. And I think we left
12 off -- did we touch on Madigan, David Madigan?

13 MS. BARNARD: No, your Honor, I think that's
14 up next.

15 THE COURT: Is that where we left off?

16 MS. BARNARD: Yes.

17 THE COURT: And you told me he was a
18 statistician, is that what he is?

19 MS. BARNARD: Your Honor, he is a
20 statistician. Again, Alyssa Barnard for Johnson & Johnson.

21 Dr. Madigan is a statistician who conducted a
22 statistical analysis of Dr. Longo's sample analysis. He
23 also provides a critique of certain epidemiological reports
24 from a statistical perspective that various defense experts
25 rely on related to Italian talc.

1 the first couple of days.

2 MR. BICKS: Understood.

3 MR. LANIER: Great.

4 MR. BICKS: Thank you.

5 THE COURT: And I'm going to be liberal on
6 the causes for hardship. What we don't want is frustrated
7 jurors that would rather be enjoying their summer. Or
8 tremendously frustrated. So I'm going to be liberal with
9 the hardships. Anything else today?

10 MR. BICKS: No, thank you.

11 MR. LANIER: Nothing from Plaintiffs, Judge.
12 Thank you very much for all your time today.

13 THE COURT: Sure. We'll gear it up. Mr.
14 Hegarty, you got something?

15 MR. HEGARTY: I just wanted to know what time
16 you wanted to start tomorrow morning.

17 THE COURT: I think I've got a criminal bond
18 motion that should take about 15 minutes. So I'd say 9:15
19 tomorrow.

20 MR. HEGARTY: Thank you.

21 (The hearing was concluded.)
22
23
24
25

CERTIFICATE

I, Jennifer A. Dunn, Registered Professional Reporter and Certified Court Reporter, do hereby certify that I am an official court reporter for the Circuit Court of the City of St. Louis; that on May 29, 2018, I was present and reported all the proceedings had in the case of GAIL INGHAM, ET AL., Plaintiffs, vs. JOHNSON & JOHNSON, Defendant, Cause No. 1522-CC10417-01.

I further certify that the foregoing pages contain a true and accurate reproduction of the proceedings.

"/s/JENNIFER A. DUNN, RPR, CCR #485"

Exhibit 16

Page 1

SUPERIOR COURT OF NEW JERSEY
LAW DIVISION: MIDDLESEX COUNTY
DOCKET NO. MID-1784-17AS

ROSALIND HENRY and FREDRICK C.)
HENRY,) TRANSCRIPT OF
) PROCEEDINGS
Plaintiffs,)
) MOTIONS
v.)
)
BRENNTAG NORTH AMERICA, INC,)
et al.,)
)
Defendants.)
)

Friday, September 14, 2018
9:05 a.m.
Middlesex County Courthouse
New Brunswick, New Jersey

B E F O R E:

H O N O R A B L E A N A C. V I S C O M I, JSC

REPORTED BY: ANDREA F. NOCKS, CCR, CRR

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1 If your Honor please, John Garde of McCarter &
2 English on behalf of the Johnson & Johnson
3 defendants.

4 MS. BROWN: Good morning, your Honor.
5 Alli Brown on behalf of the J&J defendants and I'm
6 here with my colleagues, Jed Winer, Rachel
7 Farnsworth, and Jack Nolan.

8 THE COURT: Good morning. When you
9 argue, just move up to counsel table so the
10 microphones can pick you up.

11 So as we discussed off the record, we
12 are here today with regard to in limine motions, and
13 these are in limine motions that must be decided in
14 advance of opening statements which will be Monday.

15 And so the first motions are a group
16 of motions which are related and deal with
17 Dr. Longo, plaintiffs' expert. The defendants are
18 seeking to preclude his testimony; in the
19 alternative, request a Rule 104 hearing. There's
20 some related issues with regard to Supreme Court in
21 re: Accutane litigation, as well as intertwined
22 within that, the ability of plaintiffs to utilize
23 test results where scientific articles, learned
24 treatises from Dr. Blount and the whole issue with
25 regard to her perhaps appearing by way of prior

Page 82

1 know Johnson & Johnson was on notice there was
2 asbestos in their talc.

3 THE COURT: That's a separate issue.

4 MR. SWETT: Beyond that, our case is
5 primarily going to be focused on Vermont talc.
6 Dr. Longo is going to testify about Vermont talc. I
7 don't know that Italian talc is really going to be
8 discussed in our case in chief.

9 MR. FINCH: Other than that he said
10 it was Italian talc in the --

11 MR. SWETT: In the below-the-waist.

12 THE COURT: All right. Okay. Jury
13 question in terms of interpreting that.

14 MS. BROWN: Understood. Understood,
15 your Honor. I mean, I just don't think --

16 THE COURT: It's not, you know, what
17 is that saying, clear as mud, right?

18 MS. BROWN: No. I completely
19 understand and we're happy to present this to the
20 jury. I understood plaintiff's task to be to find
21 something that suggests a purchase after '75 and I
22 think her testimony on 305 remains clear that that
23 was the last purchase time, but I understand it's a
24 fact issue.

25 THE COURT: Yeah. Okay. So I don't

Page 83

1 know why counsel said this court hates hearing about
2 its gatekeeping function because I don't; however,
3 maybe you think so, this court has always understood
4 its gatekeeping function and has exercised that
5 gatekeeping function.

6 In these talc cases, which I now
7 can't recall the first one that I tried or at least
8 started the trial before resolution, there have been
9 continual motions to bar the testimony of, frankly,
10 all of plaintiffs' experts, Dr. Lanzo usually -- not
11 Lanzo, Dr. Longo usually being on the plaintiff's
12 side, although he has been on the defense side, and
13 the court has exercised its gatekeeping function in
14 reviewing the applications before the court,
15 reviewing the expert reports, and determining where
16 a 104 hearing is necessary or not necessary and has
17 conducted a number of those hearings.

18 So in terms of our reading of the
19 Supreme Court's decision in re: Accutane
20 litigation, I'm reading from, this has not yet
21 gone -- been published, so this is from page 83 of
22 the decision. "In adopting use of the Daubert
23 factors, we stop short of declaring ourselves a
24 Daubert jurisdiction. Like several other states, we
25 find the factors useful, but hesitate to embrace the

1 full body of Daubert case law as applied by state
2 and Federal courts.

3 "First, we have already broadened our
4 approach to testing for the reliability of expert
5 testimony for certain areas in civil law. See Kemp.

6 "But to date, we retain the general
7 acceptance test for liability in criminal matters.

8 "Second, there is no monolithic body
9 of case law uniformly or even consistently applying
10 Daubert as others have noted. We hesitate to sweep
11 in adherence to the various approaches taken among
12 the circuits and state jurisdictions when applying
13 the Daubert factors; thus, we do not adopt a
14 standard we cannot fully discern in its application
15 at this time.

16 "While the factors are helpful and
17 while individual cases may be persuasive in
18 appropriate settings, we cannot ignore that there
19 are discordant views about the gatekeeping role
20 amongst Daubert jurisdictions. Our view" -- and I'm
21 eliminating the reference to certain citations.

22 "Our view of proper gatekeeping in a
23 methodology-based approach to reliability for expert
24 scientific testimony requires the propensity to
25 demonstrate that the expert applies his or her

1 scientifically recognized methodology in the way
2 that others in the field practice the methodology.
3 When a proponent does not demonstrate the soundness
4 of a methodology both in terms of its approach to
5 reasoning and to its use of data from the
6 perspective of others within the relevant scientific
7 community, the gatekeeper should exclude the
8 proposed expert testimony on the basis that it's
9 unreliable.

10 "Importantly, that approach, namely
11 to determine whether the scientific community would
12 accept the methodology employed by plaintiffs'
13 experts, would use the underlying facts and data as
14 plaintiff experts was employed by the trial court
15 here." So that's taking it back specific to that
16 case.

17 But within this decision the court
18 goes through the development of the law regarding
19 the court in its gatekeeping function; beginning
20 with Rubanick, discussing Landrigan, discussing
21 Kemp, discussing Hisenaj. And so the court is of
22 the opinion that it has exercised its gatekeeping
23 function, exercised it as it relates to Dr. Longo.

24 The present application here merely
25 adds in, judge, here is the Accutane litigation

1 case. This requires you to conduct a hearing.
2 There is no specific requirement that a hearing must
3 be conducted where the court has already undertaken
4 the analysis and found that a hearing is not
5 required because experts in the field may disagree.
6 Here, Dr. Longo's methodology, as plaintiff's
7 counsel has pointed out, as was borne out in the
8 Lanzo trial and in the pleadings that were filed in
9 advance before the court in that trial, Dr. Longo
10 employed a methodology that defendant Johnson &
11 Johnson's own consultant and now experts have
12 utilized. That Dr. Blount herself, who was a
13 consultant for Johnson & Johnson, used.

14 In re: Accutane litigation cannot be
15 read to require that there's only one methodology
16 utilized by -- in a specific area. Clearly here
17 there are different methodologies at play. With
18 regard to the methodology employed by Dr. Longo, not
19 only has it been recognized by Blount, RJ Lee,
20 plaintiffs -- defendants' expert Mr. Sanchez, but
21 ISO as well. And so the court denies the motion to
22 bar, denies the motion to require the 104 hearing.

23 I do want to get to this issue of the
24 below-the-waist, and I do find that there are
25 significant issues with regard to substantial

CERTIFICATE OF OFFICER

I CERTIFY that the foregoing is a true and accurate transcript of the testimony and proceedings as reported stenographically by me at the time, place and on the date as hereinbefore set forth.

I DO FURTHER CERTIFY that I am neither a relative nor employee nor attorney or counsel of any of the parties to this action, and that I am neither a relative nor employee of such attorney or counsel, and that I am not financially interested in the action.

ANDREA NOCKS, CCR, CRR

Certificate No. XI001573

Exhibit 17

1 SUPERIOR COURT OF THE STATE OF CALIFORNIA
2 FOR THE COUNTY OF HUMBOLDT

3 CARLA ALLEN,
Plaintiff,

4
vs. Case. DR 180132

5 BRENNTAG NORTH AMERICA, INC.,
6 (sued individually and as
successor-in-interest to MINERAL
7 PIGMENT SOLUTIONS, INC., and as
successor-in-interest to WHITTAKER
8 CLARK & DANIELS, INC.,) et al.,
9 Defendant.

10

11

12

13 REPORTER'S TRANSCRIPT OF PROCEEDINGS
14 HAD BEFORE JUDGE TIMOTHY A. CANNING
15 Volume XVI

16 Eureka, California

17 Wednesday, October 17, 2018

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19

20

21

22

23 Reported By:

24 LINDA VACCAREZZA, RPR, CLR, CRP, CSR. NO. 10201

25 JOB NO. 148417

Page 3068	Page 3069
<p>1 2 3 4 5 October 17, 2018 6 9:27 a.m. 7 8 9 REPORTER'S TRANSCRIPT OF PROCEEDINGS, held at 10 Superior Court of California, County of Humboldt, 825 11 5th Street, Courtroom 1, Eureka, California, before 12 Judge Timothy A. Canning, reported by Linda 13 Vaccarezza, a Certified Shorthand Reporter of the 14 State of California. 15 16 17 18 19 20 21 22 23 24 25</p>	<p>1 A P P E A R A N C E S: 2 KIRKLAND & ELLIS 3 Attorneys for the Defendants Johnson & 4 Johnson and Johnson & Johnson Consumer, Inc. 5 333 South Hope Street 6 Los Angeles, California 90071 7 BY: KIMBERLY BRANSCOME, ESQ. 8 F. CHADWICK MORRIS, ESQ. 9 JAY BHIMANI, ESQ. 10 11 12 13 14 SIMON GREENSTONE PANATIER 15 Attorneys for the Plaintiff 16 1201 Elm Street 17 Dallas, Texas 75270 18 BY: DAVID GREENSTONE, ESQ. 19 CONOR NIDEFFER, ESQ. 20 21 22 23 24 25</p>
Page 3070	Page 3071
<p>1 APPEARANCES (CONT'D) 2 FOLEY & MANSFIELD 3 Attorneys for Colgate-Palmolive Company 4 300 South Grand Avenue 5 Los Angeles, California 90071 6 BY: GARY SHARP, ESQ. 7 PETER MULARCZYK, ESQ. 8 9 10 11 DENTONS US 12 Attorneys for Imerys Talc America, Inc. 13 One Market Plaza 14 Spear Tower 15 San Francisco, California 94105 16 BY: MORDECAI BOONE, ESQ. 17 JENNIFER LEE, ESQ. 18 19 20 QUINN EMANUEL URQUHART & SULLIVAN 21 50 California Street 22 San Francisco, California 94111 23 BY: MORGAN TOVEY, ESQ. 24 25</p>	<p>1 THE COURT: We'll go on the record. We 2 are here on Allen versus Brenntag, case number DR 3 180132. 4 Before we call the jury in, Ms. Branscome. 5 MS. BRANSCOME: Yes, Your Honor. There 6 was one issue that we would like to raise in 7 advance of Dr. Longo's testimony, but I didn't 8 realize that Dr. Longo was in the audience. So if 9 he might be excused for this discussion. 10 THE WITNESS: No problem. 11 THE COURT: Thank you, sir. I appreciate 12 that. So Dr. Longo has left the courtroom. And 13 Ms. Branscome? 14 MS. BRANSCOME: Thank you, Your Honor. We 15 were able to work with plaintiff's counsel on 16 specific objections that we have to Dr. Longo's 17 slide set this morning. But one of the issues that 18 I raised with Mr. Greenstone is Dr. Longo's 19 discussion of other testing techniques beyond TEM 20 that have been used on Johnson's Baby Powder. 21 The way Dr. Longo's slide set is set up, 22 there's a -- one cohesive section on testing 23 methods that were used on both Johnson's Baby 24 Powder and Cashmere Bouquet. It conflates that 25 there is TEM and PLM on all the products.</p>

Page 3132

1 MR. GREENSTONE: Your Honor, would this be
2 a good place for the --
3 THE COURT: If it's a good place for you,
4 it will be a good time to take our morning break.
5 So let's return at ten after 11:00. And just a
6 reminder to the jurors. Please don't talk about
7 the case outside of this courtroom. And don't talk
8 about it amongst yourselves. Thank you.
9 (Jury leaves.)
10 THE COURT: Anything we need to address?
11 MR. GREENSTONE: I don't think so.
12 THE COURT: You're excused. Please return
13 by ten after.
14 (Recess taken from 10:52 a.m. to
15 11:09 a.m.)
16 THE COURT: Counsel may be seated.
17 Is there anything we need to address prior
18 to having the jury back?
19 MR. GREENSTONE: Not from the plaintiff's
20 perspective.
21 MR. TOVEY: No, Your Honor.
22 THE COURT: Mr. Bailiff, if you don't
23 mind, call the jury back in.
24 (Jury enters courtroom.)
25 THE COURT: Counsel may be seated. And we

Page 3134

1 products were sold. They go from a -- essentially,
2 a metal or tin can, and sometime in the mid '60s, I
3 believe, or -- it went to a plastic bottle. And
4 they had times where they said boric acid, borate.
5 So you can get an idea on the different time frames
6 that they used these different containers.
7 Q. Why is it important to look at different
8 time frames for different containers?
9 A. Because we are trying to -- it's
10 important, because we are trying to evaluate people
11 that may have had exposures in the '60s as well as
12 the '70s or the '80s and the '90s, not just today.
13 Q. Did the talc sources for Johnson & Johnson
14 change?
15 A. They did.
16 Q. And what were they, sir?
17 A. Through the '40s up until approximately
18 1968, '69 or so, it was the Italian mine for
19 Johnson's Baby Powder. From '68, '69 to
20 approximately 2004, it was from the Vermont talc
21 mines. Then after that, it's primarily, my
22 understanding, China.
23 Q. So did you do tests on Johnson's Baby
24 Powder that were from the time period when they
25 were mining from Italy, and also during the time

Page 3133

1 were in the middle of the direct examination of
2 Mr. Greenstone.
3 MR. GREENSTONE: Thank you.
4 Q. Dr. Longo, do we now understand, first of
5 all, the methodology that you used for both the
6 Johnson & Johnson test and the Cashmere Bouquet
7 test, are they generally recognized accepted
8 methodologies for doing the type of work that you
9 were doing?
10 A. Yes, it is.
11 Q. And I want to start with, are we now
12 ready -- have we talked enough about the
13 methodologies and the tools to be able to talk
14 about the actual test results?
15 A. Yes, I believe so.
16 Q. So the first I want to talk to you about
17 is the Johnson & Johnson testing. And so first of
18 all, tell us what this is demonstrating, Dr. Longo.
19 How many samples did you test, and what does this
20 picture demonstrate?
21 A. These are the number of different
22 containers that we tested, and I think we are at
23 36. 35 or 36 at this point. This original study
24 at 30, and then we did some more after that. These
25 look at -- shows you the various years that these

Page 3135

1 period when they were mining from Vermont?
2 A. Yes, sir.
3 Q. What is this showing, sir?
4 A. We received four empty cans from, I
5 believe that was the one plaintiff's attorneys,
6 Lanier law office. And when we received them, we
7 photographed them. We opened them up, and there
8 was nothing in them. They were essentially empty.
9 These cans, you can see they actually
10 would have coupons in them. It was sort of a
11 give-away. They never had talc in them. And this
12 was one of the older cans that was empty that had
13 been -- the top easily came off. Typically, you
14 cannot get those tops off unless you use something
15 to pry it. And you can see why the top easily came
16 off. It had been pushed in on the sides.
17 Q. It had actually been -- the can actually
18 had to be damaged in order for the top to come
19 easily off?
20 A. In my opinion, yes, sir.
21 Q. And with respect to these, Dr. Longo, and
22 I think I asked you this, how did you get these
23 samples?
24 A. I think every one of them except, I don't
25 know if it's on there, came from plaintiff's

Page 3136

1 attorneys. Three sets of plaintiff's attorneys.

2 Q. Is that the typical way that you might get
3 materials to test, either from plaintiffs or from
4 defendants, things of that nature?

5 A. Typically, yes.

6 Q. And what is this demonstrating, sir?

7 A. This is a off-the-shelf Johnson Baby
8 Powder bottle, and we wanted to see if we could
9 pull the top off. Just by doing it.

10 Q. Now, I know just for purposes of the
11 record, is it the kind of top that you have to
12 twist to see the holes, and then you can dump it
13 out?

14 A. Yes. That has a cap that twists, and then
15 just like you said, when you see the holes, you can
16 dispense the powder, and you turn it, it stops it.
17 So we wanted to see if somebody could take one of
18 these bottles, twist the top off, and fill it with
19 something else. Or did you have to use a tool in
20 order to get the top off.

21 Q. What did you find out?

22 A. We found out that the specifications for
23 these tops are very exact so they don't come off
24 very easily. Because you don't want to do this,
25 and have ten ounces of baby powder going where you

Page 3138

1 else's baby powder in there or cosmetic talcum
2 powder in there so then when we analyze it, we're
3 really analyzing somebody else's stuff.

4 Q. So you were checking to see if there was
5 any evidence that any of these had been tampered
6 with?

7 A. Yes.

8 Q. And what did you find out?

9 A. We couldn't determine that any of them had
10 been tampered with that we analyzed.

11 Q. What is this, sir?

12 A. This is just one of the safety hoods that
13 we have in our laboratory. So that when we have to
14 deal with things that you do not want to breathe or
15 inhale, this is specifically set up so the airflow
16 is always going under here into the system, that up
17 through the filtration system. So that if you open
18 any powders in here or any organic chemicals that
19 are not very -- you don't want to be breathing at
20 all, you do it inside the hood. We have a number
21 of these.

22 Q. And then what is this showing, sir? It
23 says at the top -- again, and I'm sorry it's been
24 cut off, "particle size distribution"?

25 A. Well, one of the things we wanted to look

Page 3137

1 may not want it to go, like on the floor or into a
2 baby. So we had people in the lab, some of the
3 more younger, stronger ones to see if they could
4 just twist it off. Nobody could do it. So then we
5 took a small metal tools and gently pried it off to
6 see if it left a mark, and that's what we are
7 looking at here.

8 Q. Over on the right side, what is this, sir?

9 A. Well, this is before, and this is after
10 the tool was used to go up under the lip and pry
11 it. And like everything, if you -- that polymer is
12 actually pretty soft, meaning it's not real
13 resistant to pressure. It leaves an indent. So
14 then we check all these bottles to see if they had
15 indents, and we did this a couple times.

16 Q. Why were you doing that? Why was it
17 important for you to check and see if there was any
18 type of evidence that the bottle had been pried
19 off? Why do you care about that, Dr. Longo?

20 A. Well, we care about it because we wanted
21 to understand that what we were saying we were
22 testing, that this is from Johnson's Baby Powder,
23 is it, in fact, was put in there originally by
24 Johnson & Johnson during the manufacturing process,
25 or in fact, did somebody open it up, put somebody

Page 3139

1 at is if we analyzed each of the Johnson's Baby
2 Powders and looked at the particle size of the
3 talc, would they be consistent from bottle to
4 bottle to bottle to bottle. That would then allow
5 you to look at and say, "Well, they have the same
6 size distribution, from the early years all the way
7 up to the years they are making it in 2016."

8 Q. What is the significance of particle size
9 distribution for particular products?

10 A. The significance is if it's all the same
11 particle size distribution, that tells me that it's
12 all been manufactured and milled the same way, and
13 if it's milled the same way, where they are now
14 milling and getting to the small particle sizes, it
15 has to have some consistency. If you're doing the
16 same thing over and over and the samples are
17 consistent from the milling process, they have the
18 same particle size distribution.

19 Q. Is there published literature that you're
20 familiar with that talks about this issue about
21 whether particular products have particular and
22 specific particle size distributions?

23 A. Yes, there is.

24 Q. And what is that? Just what in general
25 does that say, sir?

Page 3288

1 STATE OF CALIFORNIA)
2) ss.
3 COUNTY OF HUMBOLDT)

4 I, LINDA VACCAREZZA, CSR NO. 10201, do
5 hereby certify that I am a Freelance Certified
6 Shorthand Reporter in and for the State of California,
7 and that as such, I reported the proceedings had in
8 the above-entitled matter at the time and place set
9 forth herein;

10 I further certify that my stenotype notes
11 were thereafter transcribed by me, and that the
12 foregoing pages numbered 3067 to 3288, constitute a
13 full, true and correct transcription of my said
14 notes.

15 I declare under penalty of perjury under
16 the laws of the State of California that the foregoing
17 is true and correct.
18

19
20 DATED: 18th day of October, 2018.

21
22 LINDA VACCAREZZA, CSR, RPR, CLR, CRP
23 License No. 10201
24
25

Exhibit 18

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF ALAMEDA

BEFORE THE HONORABLE BRAD SELIGMAN

DEPARTMENT 23

---000---

TERESA ELIZABETH LEAVITT
and DEAN J. MCELROY,

Plaintiffs,

No. RG17882401

vs.

JOHNSON & JOHNSON, et
al.,

Defendants.

_____ /

REPORTER'S TRANSCRIPT OF TRIAL

(WILLIAM E. LONGO, Ph.D.)

Thursday, February 7, 2019

Full Session

Taken before EARLY K. LANGLEY
RMR, RSA, B.A.
CSR No. 3537

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Page 2			Page 4		
1	INDEX - (Pages 1-215)		1	INDEX - (Pages 1-215)	
2	SESSIONS		2	INDEX OF EXAMINATIONS	
3	DATE	PAGE	3	ALPHA	
4			4	WITNESSES:	PAGE
	Morning Session	11	5		
5	Afternoon Session	157		WILLIAM E. LONGO, Ph.D. (for the Plaintiff)	
6			6	Direct Examination By Mr. Maimon	27
7				Voir Dire Examination By Mr. DeJardin	48
8			7	Direct Examination By Mr. Maimon	52
9				(Resumed)	
10			8	Cross-Examination By Mr. Ashby	169
11			9		
12			10		
13			11		
14			12		
15			13		
16			14		
17			15		
18			16		
19			17		
20			18		
21			19		
22			20		
23			21		
24			22		
25			23		
			24		
			25		

Page 3			Page 5		
1	INDEX - (Pages 1-215)		1	INDEX - (Pages 1-215)	
2	INDEX OF EXAMINATIONS		2	INDEX OF EXHIBITS	
3	CHRONOLOGICAL		3		
4			4	PLAINTIFF'S	ID EV WD
5	WILLIAM E. LONGO, Ph.D. (for the Plaintiff)		5	E0519 Photo of Johnson &	62 64
	Direct Examination By Mr. Maimon	27	.36 Johnson's Baby Powder		
6	Voir Dire Examination By Mr. DeJardin	48	6		
	Direct Examination By Mr. Maimon	52		E0519 Photo of Johnson &	62 64
7	(Resumed)		7	.38 Johnson's Baby Powder -	
	Cross-Examination By Mr. Ashby	169		Singapore 4/79	
8			8		
9				E0519 Photo of	62 65
10			9	.91 Actinolite/Tremolite	
11				Elongation @200X	
12			10		
13				E0519 Photo of Tremolite Bundle,	62 65
14			11	.119 10/9/2018	
15			12	E0519 Photo of Asian Talc,	74
16				.44 Johnson & Johnson Historic	
17			13	Samples	
18			14	E0519 Photo of	74
19				.134 Actinolite/Tremolite	
20			15	Parallel Dispersion 1.605	
21				R.I. @ 100X	
22			16		
23				E0519 Photo of	74
24			17	.136 Actinolite/Tremolite	
25				Elongation @ 200X	
			18		
				E0519 Photo of	74
			19	.140 Actinolite/Tremolite	
				Elongation @ 200X	
			20		
				E0519 Photo of Tremolite (13.1 um	74
			21	.1500 x 1.3 um) 9/20/2018	
			22	E0519 Photo of Tremolite (11.2 um	74
				.156 x 0.98 um) 9/27/2018	
			23		
				E0519 Photo of bottle of	77 78
			24	.67 Johnson's Baby Powder Super	
			25		

2 (Pages 2 to 5)

Page 6

1 E0519 Photo of Johnson's Baby 77 78
 .69 Powder, Taiwan, 1/82
 2
 3 E0519 Photo of 77 78
 .235 Actinolite/Tremolite with
 Talc Parallel Dispersion
 4 1.605 R.I. @ 100X
 5 E0519 Photo of 77 78
 .241 Actinolite/Tremolite Bundle
 6 Elongation @ 200X
 7 E0519 Photo of 77 79
 .243 Actinolite/Tremolite
 8 Parallel Dispersion 1.605
 R.I. @ 100X
 9
 10 E0519 Photo of Tremolite (11.0 um 77 79
 .252 x 0.9 um) 10/17/2018
 11 E0519 Photo of Tremolite (6.3 um 77 79
 .261 x 0.2 um) 10/18/2018
 12
 13 E0514 Photo: Figure 1. Sample 113 116
 .169 M65228-001 Johnson's Baby
 Powder
 14
 15 E609 Photo of close-up image of 113 115
 Johnson's baby powder
 16 E0610 Photo of the Back of 113 115
 Johnson's Baby Powder
 17
 18 E0611 Photo of close-up image of 113 115
 Johnson & Johnson Consumer
 Products, Inc. Copyright
 19
 20 E0514 Photo of Tremolite (4.5 um 114 116
 .172 x 0.6 um) 2/24/2017
 21 E0615 Photo of Richterite (6.8 um 114 115
 x 0.45 um)
 22
 23 E0520 Alb Lung Tissue Sample: Mg 132 135
 .14 Depleted Chrysotile Image
 and Alb Lung Tissue Sample:
 24 Mg Depleted Chrysotile EDXA
 25

Page 7

1 E0520 Alb Lung Tissue Sample: 132 136
 .16 Talc Fiber Image
 2
 3 E0520 Alb Lung Tissue Sample: 132 137
 .22 Tremolite Image
 4 E0520 Alb Lung Tissue Sample: 132 138
 .25 Tremolite Bungle EDXA
 5
 6 E0520 Bla Lung Tissue Sample 132 138
 .32
 7 E0620 Scanning Electron 133 141
 Micrographs, MAS Laboratory
 8 E0621 Scanning Electron 133
 Micrographs, MAS Laboratory
 9
 10 E0622 Scanning Electron 133 141
 Micrographs, MAS Laboratory
 11 E0623 Scanning Electron 133 141
 Micrographs, MAS Laboratory
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
 24
 25

Page 8

1 INDEX - (Pages 1-215)
 2 INDEX OF EXHIBITS
 3 DEFENDANT'S ID EV WD
 4 DX June 1990 Advertisement, 175
 12204 Asbestos Issues, Hands-On
 5 Solutions
 6 DX MAS, TEM Asbestos Analysis 182
 11219 of Libby
 7 Vermiculite-Containing
 Scotts' Turf Builder
 8 Products, Prepared by:
 William E. Longo, Ph.D. and
 9 Michael D. Mount, CIH,
 OHST, April 10, 2015
 10
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Page 9

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Page 10

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Page 11

1 --oOo--

2 P R O C E E D I N G S

3 --oOo--

4 Thursday, February 7, 2019 - 8:49 a.m.
5 (Morning Session)

6 (Whereupon, the following proceedings were held
7 outside the presence of the jury:)

8 THE COURT: Good morning, everybody. So what
9 do we have?

08:49:51 10 MR. MAIMON: Yes, Your Honor.

11 In anticipation of Dr. Longo's testimony this
12 morning, I met and conferred with counsel for J&J and
13 confirmed with him that I was not going to deal with
14 talcs that are not at issue in this case that Dr. Longo
08:50:11 15 may have tested, and specifically, some of the talcs
16 that Dr. Longo tested deal with Chinese talc that
17 Johnson & Johnson sourced for their post 2003 products
18 pursuant to the Court's ruling pretrial we've avoided
19 all of the Chinese talc. So we're not going to go into
08:50:31 20 it.

21 I did note that in the cross-examination of
22 Mr. Poye the other day, there was a report that he had
23 issued to Dr. Longo that dealt with 79 samples. It
24 wasn't identified as such, but some of those samples I
08:50:44 25 happen to know because I've dealt -- defended

Page 12

1 Dr. Longo's depositions, dealt with his analysis of
2 Johnson & Johnson products that had Chinese talc in
3 them. And so I tried -- I met with counsel and
4 asked -- told him that I was not going to go into
08:51:03 5 Chinese talc, but I believe that would be improper for
6 the defendants to elicit testimony with -- from
7 Dr. Longo with regard to his testing of Johnson &
8 Johnson products that were made from Chinese talc
9 because it's irrelevant to his testimony in this case.

08:51:27 10 MR. ASHBY: Couple points, Your Honor. One is,
11 one of the Chinese talc bottles that he uses for his
12 control, so he has a -- he has a control bottle which
13 is a bottle that he purchased off the shelf that's
14 relevant to understanding the processes that he does
08:51:43 15 with respect to analysis. You have to have a control
16 blank. I don't see any way to separate the control
17 blank from the rest of his analyses. So that's the
18 first point.

19 The other point is that he has three other
08:51:56 20 off-the-shelf bottles that were purchased in the 2000s
21 that I would like to ask him about if he found asbestos
22 in those, the reason being, one, we've heard testimony
23 now from Mr. -- from Dr. Hopkins elicited by Mr. Maimon
24 regarding China and the use of Chinese talc at some
08:52:15 25 point during the use of Korean talc. There was a

Page 13

1 switchover, it sounded like, from the testimony of
2 Dr. Hopkins that Mr. Maimon elicited. So they have
3 heard about Chinese talc being used in lieu of Korean
4 talc at some point.

08:52:30 5 And then, finally, there were -- there was much
6 testimony from Dr. Hopkins with respect to what
7 Johnson & Johnson was considering in the 2000s with
8 respect to warnings. There were demonstrative -- there
9 were exhibits that were entered from, I think like 2013
08:52:47 10 or 2014 where they were discussing warnings, there was
11 a PowerPoint slide that was shown from Johnson &
12 Johnson. So, to the extent there is an issue about
13 whether Johnson & Johnson should have warned or not
14 warned, it's relevant for the jury to know that there
08:53:01 15 is testing that has been done in the 2000s, which is
16 Chinese talc, at least after 2003, that suggests there
17 is no need to warn because there is no asbestos in the
18 Chinese talc.

19 MR. MAIMON: So taking that in order,
08:53:15 20 Your Honor, I think that it is proper to question
21 Dr. Longo about the control bottle that he used, the
22 same way that they cross-examined Mr. Poye about that.
23 And I don't have any objection to that.

24 With regard to the duty to warn, the duty to
08:53:30 25 warn ends at the last exposure, which is 1998 in this

4 (Pages 10 to 13)

Page 14	Page 16
<p>1 case. And so admission by a party opponent of the 2 dangerous nature of the product is always relevant, is 3 always admissible. This witness is not going to 4 address duty to warn issues. Dr. Longo is going to 08:53:48 5 talk about the asbestos and the talc, the testing of 6 it, and Ms. Leavitt's exposure to it. 7 But he's not going to get into duty, 8 negligence, failure to warn, anything like that. 9 The final thing I would note is that the -- 08:54:10 10 well, Dr. Hopkins, I did go into the switchover from 11 Korean talc to Chinese talc for talc sold in the 12 Philippines and the Far East, the purpose of that was 13 to establish what the vintage of samples that we have, 14 which are actually the vintage of samples that 08:54:25 15 Dr. Longo tested, which would be Korean talc as opposed 16 to some other source of talc. So that was a predicate 17 to establish when was the switchover at a certain point 18 in time so that we know that any products that were 19 manufactured and sold before that time were sourced 08:54:41 20 from Korean talc. It was not -- and it was specific to 21 the Far East market to establish those dates relevant 22 to Dr. Longo's testing of the Korean talc. 23 THE COURT: Remind me what those dates were. 24 MR. MAIMON: Sure. In 1991, Johnson & Johnson, 08:54:59 25 for the Philippines switched over Dr. -- and I think I</p>	<p>1 based upon the limited arguments that counsel has made, 2 we think that Your Honor should stick to the original 3 ruling and not let the parties go into Chinese talc in 4 this regard. 08:56:38 5 MR. ASHBY: So to address some of the points, 6 as the Court knows from our discussion before about 7 personal use, the FDA testing in 2009 and 2010, that we 8 were told that we could not get into -- you know, 9 obviously there is testing by the FDA done in 2009, 08:56:56 10 2010 of cosmetic talc, and some of that cosmetic talc 11 was Johnson & Johnson. We had a hearing on that 12 because they -- a motion in limine was filed regarding 13 that. We were told we could not get into that. I 14 think now, in view of the evidence that's come in, it's 08:57:11 15 very relevant. It's certainly relevant, as we 16 explained before, to punitive damages. My fear right 17 now is what the jury has heard is there were 18 considerations about warnings in the 2000s, and when 19 that was being done, they were looking at Chinese talc 08:57:27 20 at the time. I think that -- 21 THE COURT: That's part of why I said we're not 22 going to go into it because it was a different talc. 23 MR. MAIMON: Yes. And counsel for J&J, when we 24 dealt with this issue, Your Honor, did say -- it wasn't 08:57:49 25 Mr. Ashby -- did say that Chinese talc was irrelevant.</p>
Page 15	Page 17
<p>1 even have the... 2 MR. SATTERLEY: If I may -- it was 1991. They 3 switched over from Korean to Chinese to use in the 4 Philippines. The other thing I would like to add to 08:55:16 5 Mr. Maimon's argument is if we now here in the fourth 6 week of trial start going into Chinese talc, it's going 7 to be an undue consumption of time because we have 8 extensive testimony -- obviously Dr. Longo has tested 9 Chinese talc and found asbestos in some of the bottles, 08:55:31 10 didn't find it in others. 11 We got documentation regarding Chinese talc 12 with asbestos in it. Julie Pier, who Your Honor asked 13 me to go back and start withdrawing stuff and last 14 night I worked on withdrawing depositions we were going 08:55:43 15 to designate. We have extensive documentation where 16 Julie Pier finds chrysotile asbestos in Chinese talc. 17 So we have -- if we start at this point in time have 18 to -- now have to go into proving the asbestos content 19 in Chinese talc, we're not going to be able to withdraw 08:56:03 20 many of the depositions and we're going to -- there's 21 going to be an undue consumption of time spent on 22 Chinese talc, which is at least four or five years 23 after Ms. Leavitt quit using the Johnson's Baby Powder. 24 So under 352, Your Honor has already ruled and 08:56:20 25 determined it's irrelevant and excluded this, but, even</p>	<p>1 That's what -- the pretrial hearing actually was in 2 December we had that. 3 I don't recall talking to Dr. Hopkins at all 4 about considerations of warnings in the 2000s. 08:58:04 5 MR. ASHBY: There was a PowerPoint that you 6 used that was from like 2013 or something. 7 MR. MAIMON: All that I showed was an estimate 8 that they put on of exposures. That was all. The 9 numbers of exposures, I wrote them down on the -- on 08:58:18 10 the flip chart what their estimates were. 11 THE COURT: If you want to show me the 12 PowerPoint, I'll look at it. I don't want to try to -- 13 my memory is not that great. 14 MR. ASHBY: And there were other documents from 08:58:28 15 the 2000s. My fear and my biggest concern is that this 16 jury actually thinks, because they haven't heard it, 17 that Vermont talc is the talc that's being used all the 18 way up until now. They have to make a decision about 19 punitive damages; right? And they -- the way that the 08:58:45 20 evidence has come in because of the various court 21 rulings is that they don't know the talc that's 22 currently on the market is Chinese talc, and there is 23 lots of testing that shows, including from the 24 government, that it's clean and free of asbestos. 08:58:59 25 THE COURT: Let me ask a question here.</p>

Page 18	Page 20
<p>1 Go ahead.</p> <p>2 MR. MAIMON: I actually thought that</p> <p>3 Dr. Hopkins testified that they used Vermont talc up</p> <p>4 until 2003 when they switched.</p> <p>08:59:08 5 THE COURT: I wonder if the way to deal with</p> <p>6 this issue is a stipulation by the parties that the</p> <p>7 talc at issue in this case, the Vermont talc, has not</p> <p>8 been used since 2003. That way we don't get into any</p> <p>9 of the stuff.</p> <p>08:59:23 10 MR. MAIMON: I mean, it's the truth, so we're</p> <p>11 willing to stipulate to it.</p> <p>12 THE COURT: That's very generous of you.</p> <p>13 MR. ASHBY: The problem of that, again, is that</p> <p>14 they've heard evidence from after that period</p> <p>08:59:40 15 suggesting about warnings and talking about warnings --</p> <p>16 THE COURT: You're going to have to show me</p> <p>17 what that is because I don't recall the specifics, and</p> <p>18 there's a dispute here about what was said. You need</p> <p>19 to show me what we're talking about. I'll look at</p> <p>08:59:53 20 that.</p> <p>21 In the meantime, parties let me know if you</p> <p>22 want to stipulate to telling the jury that fact. If</p> <p>23 you do, I'll tell them.</p> <p>24 MR. MAIMON: In light of that, Your Honor, I'm</p> <p>09:00:05 25 not going to go into his testing of Chinese talc. I</p>	<p>1 we're going to be litigating all the other documents</p> <p>2 and all the other depositions that we talk about</p> <p>3 Chinese talc.</p> <p>4 MR. MAIMON: Which is not this case.</p> <p>09:01:26 5 MR. SATTERLEY: Which is not this case.</p> <p>6 Exactly.</p> <p>7 THE COURT: Unless there's some showing that</p> <p>8 the door has been opened into the post-Vermont talc</p> <p>9 period, which I will look at an offer if there's some</p> <p>10 evidence of that. If that isn't there, we're not going</p> <p>11 past the control bottle. I want to hear if we have a</p> <p>12 stipulation or not on this issue in terms of these --</p> <p>13 of Vermont.</p> <p>14 MR. MAIMON: We'll wait here.</p> <p>09:01:53 15 THE COURT: You all chat about that. All</p> <p>16 right.</p> <p>17 So we're going to be on direct for a while, I</p> <p>18 presume.</p> <p>19 How long is the direct estimated?</p> <p>09:02:01 20 MR. SATTERLEY: One hour.</p> <p>21 MR. MAIMON: One hour, Your Honor.</p> <p>22 THE COURT: So that'll get us to the first</p> <p>23 break, one way or the other. We'll take a break there</p> <p>24 and before cross-X. If there's anything further</p> <p>09:02:10 25 defense counsel want to offer me, we can talk about it.</p>
Page 19	Page 21
<p>1 appreciate and agree that counsel should be able to</p> <p>2 have Dr. Longo testify that he bought control samples</p> <p>3 off the shelf.</p> <p>4 THE COURT: That certainly is permissible.</p> <p>09:00:20 5 MR. MAIMON: And that they were "not detected"</p> <p>6 any asbestos in them. That's perfectly proper.</p> <p>7 MR. ASHBY: So I can ask about the control</p> <p>8 bottle that he bought in 2016 that's free of asbestos,</p> <p>9 but.</p> <p>09:00:34 10 MR. SATTERLEY: It's not free. It's nondetect.</p> <p>11 THE COURT: Whatever he will say. However he</p> <p>12 describes it, we'll find out.</p> <p>13 MR. ASHBY: It is nondetect.</p> <p>14 Can I -- let me ask it this way: Can I also</p> <p>09:00:46 15 ask him about the other off-the-shelf bottles that he</p> <p>16 has that were also nondetect?</p> <p>17 MR. SATTERLEY: That's going to open up all the</p> <p>18 once we found asbestos in it and then we're going to go</p> <p>19 down the whole Chinese talc that, you know,</p> <p>09:01:01 20 X percentage of them had asbestos, and we're going to</p> <p>21 be litigating, then, the Chinese talc issue, because</p> <p>22 you can't have it one way, only talk about the few</p> <p>23 bottles that he didn't find it in, in the Chinese talc,</p> <p>24 and not to be able to talk about all the bottles where</p> <p>09:01:17 25 he did find it, and then once they open up that, then</p>	<p>1 MR. SATTERLEY: If Your Honor makes a ruling</p> <p>2 with regard to this issue that impacts the Chinese</p> <p>3 talc, then we would request leave to reopen the direct</p> <p>4 examination to go down that -- we hope.</p> <p>09:02:23 5 THE COURT: I will consider that depending on</p> <p>6 what my ruling is.</p> <p>7 MR. ASHBY: I don't know if we'll be able to</p> <p>8 get the offer of proof together in time. We might not</p> <p>9 be able to release the witness.</p> <p>09:02:34 10 MR. MAIMON: Offer of proof on a stipulation --</p> <p>11 THE COURT: No, no, no. We're talking about</p> <p>12 what I said. The stipulation I would like to hear</p> <p>13 about, but -- the pushback on defendant is to cite me</p> <p>14 some testimony that they would argue opens the door.</p> <p>09:02:48 15 That's what I'm talking about.</p> <p>16 MR. MAIMON: We just need to know whether or</p> <p>17 not we have a stipulation that post 2003 was not</p> <p>18 Vermont -- was not Vermont.</p> <p>19 I think that's all we need; right.</p> <p>09:03:00 20 MR. ASHBY: Let me talk to Mike.</p> <p>21 THE COURT: What I suggest, why don't you guys</p> <p>22 talk about it and give me what language you want me to</p> <p>23 use rather than having me make the mistake of inventing</p> <p>24 something that nobody's happy with, which is usually a</p> <p>09:03:14 25 good result.</p>

Page 22

Page 24

1 All right. Do we have some agreement?

2 MR. MAIMON: Plaintiffs have proposed the

3 following language as a stipulation. The parties have

4 stipulated that the source of talc for Johnson &

09:12:10 5 Johnson talcum powder products after 2003 was no longer

6 from the Vermont mines.

7 And I think we have an agreement. Want to make

8 sure.

9 THE COURT: Doesn't look like we have everybody

09:12:27 10 in the room here.

11 MR. RICHMAN: Court's indulgence, Your Honor.

12 So there's two issues, Your Honor.

13 Scott Richman. Good morning, Your Honor.

14 There's two issues. One, I don't think we

09:12:40 15 necessarily have an issue with this sentence. I think

16 the problem is that that's not the issue.

17 The issue is sort of twofold. One, plaintiffs

18 had made this an issue since they are pursuing punitive

19 damages in this case, so obviously the question for the

09:12:54 20 jury is what our conduct is. So the statement that

21 Mr. Maimon read, while factually true, the jury is

22 still speculating as to what is the product now. Is it

23 the same, better, or worse than the Vermont talc, for

24 example.

09:13:10 25 Moreover, with respect to -- and the Court

1 So not only did Mr. Satterley's question,
2 unlike some other ones where he did limit it to the
3 time at issue with Ms. Leavitt's alleged exposure,
4 these -- there was opinion testimony offered by
09:14:28 5 Mr. Egilman upon questioning by plaintiff's counsel
6 which had no limitation as to time. So, therefore, the
7 question as to "did we ever warn" has been opened by
8 plaintiff's counsel. That I set as an aside from the
9 fact that I think that -- and it's always been an issue
09:14:42 10 since plaintiffs are pursuing punitive damages.

11 MR. MAIMON: With regard to Dr. Egilman, that
12 was on the first day of his testimony, Your Honor. If
13 Mr. Richman is correct, the doctor didn't mention
14 asphyxiation. The Court has now instructed the jury
09:14:57 15 with that testimony with regard to warn -- the need to
16 warn about asphyxiation or even asphyxiation has been
17 stricken. So that's no longer -- that's not a problem
18 here. But, more to the point, the Court asked us if we
19 could stipulate that the source of the talc ore, the
09:15:08 20 talcum powder products by Johnson & Johnson after 2003,
21 was no longer Vermont, and I think there's a
22 stipulation that that is true.

23 And so we can go forward with Dr. Longo's
24 testimony in that -- under that framework.

09:15:25 25 MR. RICHMAN: I think we're reading it

Page 23

Page 25

1 asked for a proffer and I'm trying to -- frankly,
2 scrambling to find what we're referencing. And at
3 least as one reference, Mr. Satterley on January 24,
4 2019, asked -- this was to Mr. Egilman.

09:13:27 5 And there was a question: "Want to switch
6 gears and talk about warnings here. Have you reviewed
7 Johnson & Johnson documents with regard to warnings?"

8 "Answer: Yes. And I was at the deposition of
9 the person who was in charge of creating them."

09:13:40 10 And then:
11 "Question: Johnson & Johnson's person?"

12 "Answer: Mrs. Musco.

13 "Question: And you have opinions with regard
14 to whether or not from a warnings perspective and a
09:13:50 15 public health perspective whether Johnson & Johnson
16 adequately warned regarding the dangerous nature of its
17 products?"

18 Mr. Brown objected.

19 The Court overruled the objection.

09:14:03 20 The witness said: "Yes."

21 "Mr. Satterley: What is that opinion?"

22 "Objection. Same ruling.

23 "Witness: Two opinions. They did not warn
24 about agreed hazards of the products."

09:14:16 25 Then he went on to talk about asphyxiation.

1 differently. I think the issue was whether it would be
2 fair game for us to inquire into.

3 So, as I indicated, we don't have an issue with
4 that stipulation necessarily, but that doesn't change
09:15:34 5 our position that the testing of Chinese talc the
6 plaintiffs had made relevant numerous times, not only
7 by their own questioning of Dr. Egilman without
8 limiting the time, and specifically in response to
9 Mr. Maimon's point, the witness's exact opinion as to
09:15:50 10 his opinions, it was, quote, two opinions. They did
11 not warn about agreed hazards of its products. That
12 would have been asphyxiation, which was known since
13 1922 that resulted in baby deaths.

14 Secondly, they did not warn about the presence
09:16:02 15 of accessory minerals that were carcinogens in the
16 products that they knew of. So the witness was clearly
17 separating the two opinions. So, while the Court did
18 properly strike the opinions regarding asphyxiation,
19 obviously, Dr. Egilman's opinions regarding warnings,
09:16:15 20 which we objected to and which were, in fact,
21 overruled, are still in front of the jury for their
22 consideration.

23 So that door has been opened a number of times
24 by plaintiff's counsel.

09:16:25 25 THE COURT: I don't want to have -- end this

Page 26	Page 28
<p>09:16:38 1 debate right now. So let me suggest the following: 2 We're going to go forward with Longo right now. 3 Right now we're not going into Chinese talc 4 issues. I am happy, if the parties want me to, if they 5 agree to give a stipulation about the source of talc. 6 If plaintiff wants to discuss with defendant an 7 agreement about what period of time they're claiming 8 lack of warnings in this case, you're welcome to do 9 that and I'll leave that to you all to discuss one way 10 or the other. 11 We have some -- before we get to 12 cross-examination, and I certainly, if the issue of 13 Chinese talc becomes relevant for whatever reasons, I 14 will adjust the examination schedule to make sure 15 everyone gets a fair game to do that. For the moment, 16 we're not going into Chinese talc. And I'm not reading 17 any stipulations because it doesn't sound like there's 18 yet an agreement about stipulations. So I encourage 19 you all to sit down and talk about it. 20 All right. Let's bring in the jury. 21 (Whereupon, the jury having entered the 22 courtroom, the following proceedings were held:) 23 THE COURT: Good morning, everybody. 24 THE JURY: Good morning, Your Honor. 09:19:26 25 THE COURT: We're playing our scheduling</p>	<p>1 Q. And have we asked you to come to court and 2 share the conclusions of your testing of Johnson & 3 Johnson talc products? 4 A. Yes, you have. 09:20:50 5 Q. Okay. And I would like just as an outline to 6 talk about three points that we're going to talk about 7 today. One is asbestos in Johnson's Baby Powder and 8 specifically for the years 1966 through 1998, and 9 specifically regarding Korean talc and Vermont talc. 09:21:11 10 Are you prepared to talk to us about that, 11 Dr. Longo? 12 A. Yes, I am. 13 Q. And we've also asked you, and are you prepared 14 to speak about Johnson & Johnson testing of their talc 09:21:20 15 for the presence or absence of asbestos? 16 A. Yes, I am. 17 Q. And, finally, have we asked you and are you 18 prepared to discuss Terry Leavitt's asbestos exposure 19 from those products? 09:21:30 20 A. Yes, sir. 21 Q. Let's talk a little bit about your background, 22 and can you start with your educational background for 23 us? 24 A. Yes. I received a bachelors of science in 09:21:40 25 microbiology, a masters of science in material science</p>
Page 27	Page 29
<p>09:19:40 1 musical chairs here. So right now Dr. Egilman is not 2 the next witness. We have a different witness right 3 now. Maybe he will come back later today or later, I 4 don't know yet now. 5 Counsel, are ready to call your next witness? 6 MR. MAIMON: Yes, thank you, Your Honor. 7 At this time plaintiffs call to the stand 8 Dr. William Longo. 9 WILLIAM E. LONGO, Ph.D. (for the Plaintiff) 10 sworn as a witness, 11 testified as follows: 12 THE CLERK: Please state and spell your name 13 for the record. 14 THE WITNESS: William Edward Longo, L-o-n-g-o. 09:20:15 15 DIRECT EXAMINATION BY MR. MAIMON: 16 Q. Good morning, Dr. Longo. 17 A. Good morning. 18 Q. Could you introduce yourself to the jury? 19 A. Yes, sir. My name is Bill Longo and I live in 09:20:25 20 Cumming, Georgia, which is one of the many suburbs 21 around Atlanta. 22 Q. Have we asked you to come to court to share 23 with the members of the jury your expert opinions about 24 several aspects of Terry Leavitt's case? 09:20:40 25 A. Yes, sir.</p>	<p>1 and engineering, and finally finished up with a Ph.D., 2 or doctorate, in material science and engineering, all 3 from the University of Florida. 4 Q. Can you explain for the members of the jury 09:21:54 5 what the specialty of material science is? 6 A. Well, quite simply, it's the study of 7 materials. And it's usually broken down into five or 8 six grids depending on what material scientist you talk 9 to. There's minerals, ceramics, polymers or plastics, 10 metals, metallurgies, composites where you may mix two 09:22:15 11 of these different types of materials to get a new type 12 of material, and biomaterials, which I spent a lot of 13 time in graduate school. Those were the things that 14 you implant into the body, such as intraocular lens if 09:22:34 15 you have cataract surgery, or, unlike me, since I spent 16 all my time as a nerd, you played athletics and later 17 in life you have to get a knee replacement or a 18 shoulder replacement or that sort of thing. So. And 19 there's material science in the biomaterials. It's 20 more about strength and biomechanic ability. 09:22:51 21 Q. After you obtained your Ph.D., can you trace 22 for us your professional history? 23 A. Yes, sir. When I graduated, I had started a 24 small company called Microanalytic -- excuse me -- 09:23:11 25 Micro Laboratories -- Microanalytical Laboratories,</p>

Page 30		Page 32	
	1 actually. And we were one of the first asbestos	1	synthesis. So it covers a broad range.
	2 testing labs in the country that specialized in	2	Q. You may -- I think you might be the first
	3 analyzing air filters by transmission electron	3	expert in our trial to talk about industrial hygiene.
	4 microscopy.	4	Just briefly tell us, what is industrial hygiene?
09:23:26	5 Q. When was that?	5	A. Industrial hygiene can be broken down into four
	6 A. 1984, I believe that was.	6	points. As the word goes, industrial, so it usually
	7 Q. Go ahead.	7	has to do with folks who have worked at a workplace:
	8 A. I still needed a day job, so I stayed on at the	8	factory, chemical plant, what have you. An industrial
09:23:38	9 University of Florida as a post-doctoral associate.	9	hygienist is supposed to be able to anticipate a
	10 Anybody that's familiar with that, it really means	10	problem. And I'll exaggerate the problems. Walk
	11 cheap labor for the universities. But it was a good	11	into -- walks into a manufacturing facility that is
	12 experience.	12	making carburetor plant using solvents. And they smell
	13 So then I -- I finally was promoted to visiting	13	that kind of sweet smell some of these solvents have, a
09:23:51	14 assistant professor.	14	new car smell, which we all trigger -- you know, it's
	15 And then I left and went to Atlanta and started	15	not really that good for you. So they try to replace
	16 Materials Analytical Services. And that was in --	16	that. I smell volatile -- potential volatile organic
	17 opened the doors in 1988 and I've been there ever	17	compounds, so the next thing is to, okay, let me tell
	18 since.	18	evaluate do this. Do some basic air sampling, try to
09:24:08	19 Q. And what position do you have with Material	19	track it down. Do the air sampling, analyze it, and
	20 Analytical Services or what we'll call MAS?	20	go, okay, what do we have? We have these types of
	21 A. I am the president.	21	organic compounds. What does that mean? Used in the
	22 Q. And we'll talk a little bit about the	22	process.
	23 laboratory and its facilities, but are you a member of	23	So the third step would be remediation. That
	24 any professional associations?	24	means it would be anticipation, the measurement, and
09:24:21	25 A. Yes, sir. I'm a member of the American	25	then the remediation part of it, and then the -- make
Page 31		Page 33	
	1 Industrial Hygiene Association.	1	sure it doesn't happen again, change some of the
	2 I'm a member of the Materials Research Group.	2	procedures of the process. That's what industrial
	3 I'm a member of Microanalysis Microprobe	3	hygienists do.
09:24:36	4 Microscopy Group.	4	Q. In the course of your responsibilities, your
	5 I'm a member of the American -- no longer	5	professional responsibilities, is it part of your
	6 called the American Society of Testing Materials. It's	6	practice to remain up-to-date and review industrial
	7 now ASTM International.	7	hygiene literature?
	8 I am a member of -- there's a couple more.	8	A. Yes, sir. But primarily in the area that I
09:24:50	9 There's the Ceramics Society.	9	have interest in, I have been working on for years. So
	10 I'm a member of the American Chemical Society.	10	most of it has to do with some type of air sampling for
	11 And a few others.	11	asbestos or protocols for that. So that's what I tried
	12 Q. The first organization that you mentioned was	12	to keep up-to-date on.
	13 the American Industrial Hygiene Association.	13	Q. And have you participated in publications which
	14 What is that?	14	deal with industrial hygiene aspects of exposure to
09:25:02	15 A. That's a trade group designed to help develop	15	asbestos?
	16 industrial hygienists. They're also the group that is	16	A. Yes, I have.
	17 the governing body of getting you to become a certified	17	Q. Have you made presentations to colleagues at
	18 industrial hygienist. They have conferences. So it's	18	professional gatherings concerning these issues?
	19 a scientific community of folks interested in	19	A. Yes, sir. Typically all around asbestos.
09:25:20	20 industrial hygiene. And not just asbestos. It's all	20	Q. And have you actually conducted studies from an
	21 types of potential exposures like volatile organic	21	industrial hygiene perspective to assess exposure to
	22 compounds, VOCs, or particulates. Even when officers	22	asbestos from various products?
	23 now raid a meth lab, there's all types of industrial	23	A. We have.
	24 hygiene protocols now for decontaminating those areas	24	Q. Okay. We mentioned publications.
09:25:47	25 from all the different chemicals they use for	25	Have you published in the peer-reviewed

Page 34

1 scientific literature?

2 A. I have.

3 Q. And, specifically with regard to the subject of
4 asbestos, could you tell us about generally how many
5 publications you have and what types of journals?

6 A. I would estimate on peer-reviewed publications
7 approximately a dozen going all the way back to the
8 research that I was doing at the University of Florida.

9 So we have publications in more
10 pharmaceutical-type publications to the journal of
11 Cancer for our work we did on determining the
12 exposure -- potential exposure to folks smoking the
13 Kent cigarettes from the 1951 to '55 time frame when
14 they were putting crocidolite in the filter, to the

15 American Society for Industrial Hygiene, papers in
16 exposure potential from removing asbestos gaskets, to
17 building exposures from the disturbance of materials
18 like fireproofing, asbestos fireproofing, or asbestos
19 acoustical plasters. And we try to mimic how a worker
20 uses these products so that we can understand that,
21 okay, when they do this, there may be this potential
22 exposure.

23 So it really covers a broad range.

24 But more -- most of it is in the area of

25 asbestos exposure or developing protocols for measuring

Page 35

1 asbestos.

2 Q. Are you board certified in any areas?

3 A. Yes, sir, I am.

4 Q. Tell us about that.

5 A. I'm a board certified forensic engineer, and
6 recently I was given the title of diplomat. So I guess
7 there's nowhere to go in that organization.

8 Q. Have you worked for any EPA groups with regard
9 to asbestos engineering?

10 A. Yes, sir, I have.

11 Q. Tell us about that, please.

12 A. I've been on two EPA working groups, science
13 groups. One of them was for a panel of scientists from
14 Canada in this country to help develop testing
15 protocols for the Environmental Protection Agency using
16 things like scanning electron microscopes, but
17 primarily transmission electron microscopes for
18 measuring asbestos in something as simple as settled
19 dust in a building. Do you have asbestos up here, and

20 you want to know if you have to do some remediation
21 down here, you have to have a standard protocol for
22 removing the dust off the surface and then analyzing it
23 so you can get some sort of information on how
24 contaminated that surface is because you can't see it,
25 but you want to make sure -- all buildings have dust

Page 36

1 over time. If you go in a room that hasn't been --
2 been in for a while, you got a little dust on the
3 surface, we want to see how much asbestos gets in that
4 dust.

5 I was also on EPA's, when they existed,
6 peer-reviewed group. There was four scientists from
7 this country and Canada that would meet every six
8 months, and we would go over EPA's research into areas
9 of asbestos. We would give them what we thought should
10 be addressed. We would look at what they were
11 reviewing. We would peer review the contractors hired
12 to do the testing for studies. That's pretty
13 interesting. We did that for three or four years. And
14 I think the administration changed at one point and
15 there was no more money for that.

16 Q. You mentioned ASTM.

17 Have you had any roles in standards adopted or
18 put through ASTM?

19 A. Yes, sir.

20 Q. And specifically with regard to asbestos, could
21 you tell us what your roles have been?

22 A. The primary one is where I was the -- trying to
23 think of the word -- I was the person that was in
24 charge of getting one standard through. Again, it's
25 this method for determining the number of asbestos

Page 37

1 fibers and bundles in settled dust, and it was the D22
2 committee, and we had 25 committee members, a hundred
3 subcommittee members, 125 committee members
4 specifically for that.

5 And then we had the general session, which
6 was -- been a thousand, and then eventually that method
7 goes out to all 40,000 members. It took six years to
8 get 25 scientists to agree on the language. I like to
9 think I'm an okay scientist. I'll never be a
10 politician. That's why I would never do that again.
11 But I still participated in that.

12 And that -- that was in 1995, '96. I got, you
13 know, scientist appreciation of award stuff, and it is
14 still a standard today. It's the -- it is the D --
15 D7755, I believe it is. Every TEM lab in the country
16 that does asbestos analysis uses that method. And in
17 every three or four years it has to be revalidated. It
18 just doesn't stay in there forever. So that's now in
19 the works since 1996.

20 Q. Have you consulted for any governmental
21 agencies?

22 A. Yes, sir. We have consulted for the National
23 Institutes of Health.

24 We have done work for the Environmental
25 Protection Agency.

10 (Pages 34 to 37)

Page 38

Page 40

1 We have done work for the Center for Disease
2 Control.
3 We have done work for the Department of
4 Defense.
09:33:55 5 We have done work for the FAA.
6 And it's -- and a lot of these are nonasbestos.
7 The FAA was interesting.
8 We have worked and consulted for the General
9 Services Administration, the United States Post Office
09:34:12 10 that deal with some issues they had dealing with
11 asbestos.
12 Trying to think if there's any other government
13 agencies. I think that's it.
14 Q. Have you consulted for attorneys such as
09:34:22 15 myself, Mr. Satterley with regard to clients of ours in
16 claims that are made in litigation?
17 A. Yes, I have.
18 Q. Have you consulted for attorneys representing
19 defendants in asbestos litigation?
09:34:34 20 A. I have done that, too.
21 Q. Have you tested products at the request of
22 plaintiffs lawyers?
23 A. We have.
24 Q. Have you tested products on behalf -- at the
09:34:42 25 request of defense lawyers?

1 We have numbers of optical microscopes.

2 We have gas chromatographs, mass spectrometers.

3 Probably the only commercial lab in the country

4 that has what we call a "triple quad liquid

09:36:30 5 chromatography unit." And being a material scientist,

6 I did some mass spectrometry back in the day when they

7 were -- they did this whole area. So what that means

8 is, is when you inject something like a pharmaceutical

9 and it goes through a little column and gets to the

09:36:47 10 first mass spectrometer, you're literally blowing the

11 molecule up. So it's kind of like blowing a house up.

12 And then you go and then pick through the pieces and

13 say, okay, we got copper pipe, we got this molecule, we

14 got this, we got this. Once you blow up the first

09:37:05 15 time, it goes through the second triple squad. It has

16 another mass spectrometer and so on and so forth.

17 The bottom line is it's very sensitive for

18 pharmaceuticals testing. You have active ingredients

19 right down to look at past parts per billion.

09:37:21 20 We have other material scientists.

21 We have physicists.

22 We have microbiologists.

23 We have biologists.

24 We have geologists.

09:37:29 25 We have mineralogists.

Page 39

Page 41

09:35:04 1 A. We have. Our lab will do for both sides. And
2 we try to call it like we see it. If they want us to
3 test it, they -- either defense or plaintiffs, they
4 can't be unhappy with us if they're not happy with the
5 results.

09:35:20 6 Q. Tell us a little bit about MAS. You say we do
7 it. Tell us about your facilities, the specialties of
8 the people working under your supervision at MAS.

09:35:39 9 A. Yes, sir. MAS, is in Suwanee, Georgia, right
10 next door to Cummings, Georgia, another suburb in
11 Atlanta. We have a 20,000 square-foot laboratory. We
12 have approximately 42 people now. It's a material
13 science organic chemistry.

09:35:57 14 We have four transmission electron microscopes,
15 all analytical transmission electron microscope. We
16 just added took an old one out and put a new
17 state-of-the-art one in. I don't like it as much
18 because it's all automated now. You sit in front of a
19 computer screen. And we have some of the younger
20 microscopists. They love it. They have -- like a joy
21 stick, they can run it. I still like the knobs and the
22 floor and the screen.

09:36:10 23 We have two scanning electron -- field emission
24 electron microscopes. One of them is a state of the
25 art and is also automated.

1 We have inorganic chemist.
2 Organic chemist.
3 Electron microscopists.
4 Scanning electron microscopist.

09:37:43 5 Q. Do you call upon all of those facilities and
6 all of those specialties in conducting your analyses
7 and speaking to them?

8 A. Yes. If it's routine analysis where we're
9 following protocols on everyday work --

10 MR. BROWN: Bless you --

11 THE WITNESS: -- it -- if they -- if they have
12 a question. But on the more challenging stuff, we all
13 get together and discuss it. And it's literally
14 sitting around a conference room. And a project will
09:38:09 15 come in and we'll go, okay, this gasket failed, and
16 2200 gallons of organic material, liquid went into a
17 creek and obviously the gasket failed, who's had some
18 experience with this, and then we go, okay, what is
19 your hypothesis, what do you think happened? And then
09:38:30 20 we do the tests, prove it one way or the other. So I
21 get heavily involved in that.

22 My background is electron microscopy, optical
23 microscopy, so more of the challenging stuff, we're
24 involved, and we're continually trying to improve these
09:38:47 25 analyses, specifically how to get better and better

Page 42		Page 44	
	1 detection limits when you're looking for something.		1 just an interesting experience, because we have
	2 Q. Is your laboratory accredited?		2 auditors in there all the time. Nobody has ever said
	3 A. Yes, it is.		3 that they would prosecute us.
09:38:59	4 Q. Tell us about the accreditations that your lab		4 Q. Good. Good. Talk to us about, you've tested
	5 has.	09:41:29	5 products for the presence of asbestos?
	6 A. We're accredited by the American Industrial		6 A. Yes, sir, I have.
	7 Hygiene Association.		7 Q. And tell us just the magnitude as far as the
	8 We're accredited by the National Voluntary		8 number of products that you have been involved in the
	9 Laboratory Accreditation Program.		9 testing of for asbestos?
09:39:10	10 Q. That's NVLAP?	09:41:40	10 A. For individual asbestos samples that have
	11 A. That's NVLAP. Run by NIST.		11 arrived at our laboratory, I'll bet we have tested at
	12 We are ISO, International Standards		12 least maybe more now 400,000 individual asbestos
	13 Organization, accredited for quality control and for		13 products. We've been in business now for 30 years.
	14 doing specific analysis.		14 Q. And you talked to us about assessing asbestos
09:39:23	15 We're also ISO accredited to accredit other	09:41:59	15 exposures.
	16 laboratories' testing for, especially VOCs for the		16 Has your laboratory been involved in asbestos
	17 green labeling material.		17 exposure assessments for use of products?
	18 We have an FDA number. You're not accredited		18 A. Yes, sir, we have.
	19 by the FDA, but you have to show a lot of different		19 Q. And tell us about, you know, how many of those
09:39:45	20 things that you do.	09:42:10	20 types of assessments have you made?
	21 And all these accreditations have audits.		21 A. We have probably done over 150 of those where
	22 Typical audit is they'll let you know in two months		22 we get asbestos products that have been manufactured
	23 they're sending in an auditor and he's going to arrive		23 maybe in the '40s, '50s, and '60s. And it's sort of
	24 on this day and is he okay, do you have conflicts with		24 like antique hunting: find these specimens or these --
09:40:03	25 him. They're all like that. Except the FDA.	09:42:31	25 we call them "exemplars" -- that were manufactured,
Page 43		Page 45	
	1 Q. They show up when they want; right?		1 say, 1973, it's never been out of the box, it's never
	2 A. Yeah. You know you have an audit with the FDA		2 been out of the bag. And then we have a -- two rooms
	3 when your assistant calls you at ten minutes to 8:00		3 that have been specially designed that we can do the
	4 and says, there's two FDA agents here for your audit.		4 testing in it, just like workers would have done.
09:40:19	5 That was an experience.	09:42:49	5 For example, asbestos-containing joint compound
	6 Q. And you do have your FDA number; right?		6 going up on drywall. This containment room where you
	7 A. We do have an FDA number. And all the auditors		7 can work in has windows, you can videotape as to all
	8 they do a debriefing at the end. I have yet to have		8 the proper procedures that if asbestos is released in
	9 one where they didn't say, okay, well, you just -- you		9 is not released to the outside. It's scrubbed. The
09:40:30	10 need to do this.	09:43:10	10 workers are "investigators," I call them, including me
	11 The debriefing after FDA is you may get a		11 at times. You know, we have full-face respirators,
	12 letter, fixing a few things, and you have a few things.		12 supplied air, Tyvek suits, Tyvek-type suits under work
	13 Or you may get a 486, and that's like the most		13 clothes. We take all the precautions. Then we use
	14 terrifying thing you can say to a lab that has an FDA		14 these products just like they used to be used: mix it
09:40:53	15 number because then they have you write everything	09:43:27	15 up the joint compound, put it on, let it dry, come back
	16 down, type it on your letterhead what they found wrong,		16 and sand it, and see specifically what the exposures
	17 and they publish it.		17 are. That room is 20-by-15-by-8.
	18 Then they went to a part that I wasn't		18 Then we have another, I'll call it a "room"
	19 anticipating. They said, we can lock your lab up. Or		19 that we can use larger projects in. Say, we're going
09:41:06	20 we can prosecute you.	09:43:40	20 to put a car in there or a truck. It's 66 feet long,
	21 And I went, does that mean the president?		21 42 -- 44 feet wide and 20 feet tall. We move
	22 Yes. I'm not saying anything that's going to		22 45,000 cubic feet of air through there every hour, four
	23 happen. But that's what --		23 times an hour so we can keep the ventilation. And
	24 I'm going, why am I doing this anyway?		24 we've done things in there like cut a big section of
09:41:19	25 But anyway it was all -- it was good. It was	09:44:02	25 concrete pipe with a chop saw to see how the exposure

Page 46	Page 48
<p>1 is more realistic out in the real world than somebody 2 out in the field. 3 We use all the standard protocols for 4 measurement. Take air samples, analyze it, see what 09:44:20 5 the exposures are, use all the standard measurements 6 that you're -- you would do for a typical occupational 7 exposure and then write it up. 8 Q. Are your methods for analyses different 9 depending on whether or not you're working at the 09:44:34 10 request of a plaintiff's lawyer or a defense lawyer? 11 A. No, sir. We do the exact same thing for both 12 sides, so to speak. 13 Q. Have you published on these subjects in the 14 peer-reviewed literature? 09:44:45 15 A. Yes, sir, I have. 16 Q. Now, have you tested Johnson & Johnson products 17 for asbestos content and exposure assessment? 18 A. I have. 19 Q. And have you reviewed and considered Johnson & 09:44:57 20 Johnson and Imerys internal documents concerning those 21 subjects? 22 A. I have. 23 Q. And are you prepared to share your conclusions 24 from the perspective of material science, testing for 09:45:07 25 asbestos, and assessment of asbestos exposure from an</p>	<p>1 MR. DEJARDIN: Yes, Your Honor. 2 Can I voir dire? 3 THE COURT: You may. 4 VOIR DIRE EXAMINATION BY MR. DEJARDIN: 09:46:38 5 Q. Good morning, Dr. Longo. 6 A. Good morning, sir. 7 Q. You told the ladies and gentlemen of the jury 8 that you are a material scientist it; right? 9 A. Yes, sir. 09:46:44 10 Q. And you are not here to testify about what 11 caused Mrs. Leavitt's mesothelioma; correct? 12 A. No, sir, I'm not. 13 Q. You don't do causation? 14 A. No, I do not. 09:46:59 15 Q. As far as the testing that you've done in this 16 case, of any of the talcs, none of that talc came from 17 Mrs. Leavitt; correct? 18 A. That is correct. Other than I would say 19 from -- other than her lung tissue, no, we didn't get 09:47:19 20 any samples of her talc. 21 Q. And I'll clarify. None of the -- any of the 22 bottles or samples of actual talc that you've tested 23 came from Mrs. Leavitt; correct? 24 A. Oh. That is correct. 09:47:31 25 MR. DEJARDIN: Your Honor, can we have a</p>
Page 47	Page 49
<p>1 industrial hygiene perspective? 2 A. Yes, sir. 3 MR. MAIMON: Your Honor, at this time I would 4 offer... 09:45:23 5 BY MR. MAIMON: 6 Q. In addition to looking at exposures and actual 7 products, does your laboratory analyze tissue, human 8 tissue, to determine the presence or absence of 9 asbestos and how much is there? 09:45:37 10 A. Yes. We do it quite regularly. 11 Q. Are you involved in supervising that work? 12 A. Yes. All the work done at MAS ultimately goes 13 through me. Ultimately, I set up the procedures and 14 protocols, and when we're working on an analytical 09:45:55 15 problem, I'm typically -- myself and the other -- one 16 other senior scientist will go through and go, okay, 17 this is -- this is our plan-type thing. So I'm 18 involved in all of it, especially things like tissue 19 analysis. 09:46:09 20 MR. MAIMON: Your Honor, at this time we would 21 offer Dr. Longo as an expert in material science, 22 testing for asbestos, both in bulk samples, air 23 samples, and tissue, and, finally, with regard to the 24 assessment of asbestos exposure from an industrial 09:46:25 25 hygiene perspective.</p>	<p>1 sidebar real quick? 2 THE COURT: Okay. 3 (Whereupon, the Court and counsel, having 4 convened in the Court's chambers out of the presence of 09:48:28 5 the jury, the following proceedings were held:) 6 THE COURT: Okay. 7 MR. DEJARDIN: Thank you, Your Honor. So the 8 issue -- and I just want to discuss it really 9 quickly -- is plaintiff's counsel mentioned three areas 09:48:40 10 that he was going to use Dr. Longo for. They were 11 testing of asbestos -- or testing of products from 1966 12 to '98. Two was testing of talc in general. Right? 13 THE COURT: I'm not sure what you're referring 14 to because that wasn't what the testimony was just now. 09:48:58 15 MR. DEJARDIN: Those are the three things he 16 had written up on the board as far as what he was -- 17 MR. SATTERLEY: But that's not the offer. 18 MR. MAIMON: I offered him as an expert in 19 material science, testing for asbestos in samples air 09:49:08 20 and tissue, and the assessment of asbestos exposure 21 from an industrial hygiene perspective. 22 That was the offer as an expert. 23 MR. DEJARDIN: The last point that I was going 24 to make was -- and I thought on the board he had 09:49:19 25 written Mrs. Leavitt's exposure to asbestos.</p>

Page 50

Page 52

1 And he doesn't have any foundation to talk
 2 about what Mrs. Leavitt was actually exposed to because
 3 he hasn't tested anything that she actually used. He
 4 can testify about what his testing with respect to
 09:49:34 5 Johnson & Johnson Baby Powder or Imerys talc was, but
 6 he cannot attach it to Mrs. Leavitt because she didn't
 7 use any of the products that he actually tested. And
 8 we already have -- and we already have --
 9 THE COURT: I think this might be a little
 09:49:49 10 premature, because I don't know what they're going to
 11 ask. Obviously, if they ask him, what did Ms. Leavitt
 12 actually use, he's already indicated he doesn't have
 13 her bottles.
 14 But if the testimony is, I've looked at the
 09:50:01 15 samples of these, and they had whatever asbestos,
 16 accordingly, you know, that was what was out there.
 17 MR. MAIMON: He has reviewed her testimony --
 18 MR. SATTERLEY: Testimony.
 19 MR. MAIMON: He's done assessments of her use
 09:50:18 20 of the product. That was all disclosed. And he was
 21 deposed on it, so I'm going to ask him about those
 22 issues.
 23 MR. DEJARDIN: And I have no problem with that.
 24 And he has read that stuff. It's just that he cannot
 09:50:29 25 connect any of his asbestos that he's found in any talc

1 going anywhere near that or yet, and if we start
 2 getting near it, raise an objection at that time.
 3 MR. SATTERLEY: While we're here -- so can
 4 we -- is there any other objection to his
 09:51:36 5 qualifications as offered?
 6 MR. DEJARDIN: No. That's the only thing I
 7 had.
 8 MR. SATTERLEY: Does J&J --
 9 MR. ASHBY: No.
 10 MR. SATTERLEY: Okay.
 11 THE COURT: I don't want to keep breaking it
 12 up. Let's go.
 13 (Whereupon, in chambers having concluded, the
 14 following proceedings were held in open court in the
 09:52:43 15 presence of the jury:)
 16 THE COURT: Anything further, defense counsel?
 17 MR. DEJARDIN: No, Your Honor. Thank you.
 18 THE COURT: This witness will be accepted as an
 19 expert on the topics of material science, testing for
 09:52:53 20 asbestos, bulk air and tissue, and assessment of
 21 exposure from an industrial hygiene approach.
 22 With that in mind, Counsel, you may proceed.
 23 MR. MAIMON: Thank you, Your Honor.
 24 DIRECT EXAMINATION BY MR. MAIMON (Resumed):
 09:53:03 25 Q. Dr. Longo, I'd like to just talk about what

Page 51

Page 53

1 product to Mrs. Leavitt because she didn't -- he didn't
 2 test any of her products.
 3 MR. SATTERLEY: That's not --
 4 THE COURT: That seems to me that's argument
 09:50:40 5 and right now. At this preliminary qualification
 6 stage, I don't see how that really comes into play at
 7 this point. Nor until I actually hear what the
 8 testimony is offered, whether he's offering opinion
 9 without foundation or not. I understand your concern.
 09:50:54 10 But I don't yet see that there's anything on the table
 11 here for me to rule on.
 12 MR. ASHBY: I think some of the concern here,
 13 and I already talked to Mr. Maimon about this and he
 14 can correct me -- is the extrapolation issue?
 09:51:08 15 MR. MAIMON: He's not going to extrapolate
 16 from -- he's not going to do an extrapolation, a
 17 statistical extrapolation.
 18 MR. DEJARDIN: That's as to the bottles just in
 19 general, though.
 09:51:17 20 MR. MAIMON: Your Honor, I've offered him as an
 21 expert.
 22 Can we move forward?
 23 THE COURT: Let's hear what he actually says
 24 when we get to it. But I understand. I'm sensitive to
 09:51:25 25 the concern you have. Right now I don't know if we're

1 your opinions are and then we'll talk about the bases
 2 for your opinions, okay?
 3 A. Yes, sir.
 4 Q. So, number one, have you reached a conclusion
 09:53:13 5 with reasonable scientific certainty as to whether or
 6 not Johnson's Baby Powder from 1966 to 1998, whether it
 7 was sourced from Korea and, or Vermont, contained
 8 asbestos?
 9 A. I have reached a conclusion.
 09:53:27 10 Q. And what is your conclusion?
 11 A. That it does.
 12 Q. And with regard to the testing by Johnson &
 13 Johnson and for Johnson & Johnson of its products
 14 during that period of time, have you reached a
 09:53:40 15 conclusion as to whether or not any nondetect reports
 16 or "no quantifiable asbestos detected" reports, whether
 17 that changes your opinion on number one in any way
 18 whatsoever?
 19 A. No, none. None whatsoever.
 09:53:53 20 Q. And then, finally, have you reached a
 21 conclusion from an asbestos exposure assessment
 22 perspective, from the perspective of industrial
 23 hygiene, as to whether or not Mrs. Leavitt was exposed
 24 to asbestos from her use of those products during that
 09:54:09 25 period of time?

14 (Pages 50 to 53)

Page 54		Page 56	
	1 MR. DEJARDIN: Objection. Foundation.		1 while, and we had microscopes that we -- TEM
	2 THE COURT: I'll let him state the opinion. So		2 microscopes that we had bought that could easily
	3 overruled. We'll see. Subject to a motion to strike.		3 resolve 5 million, 6 million times. You could actually
	4 Foundation is not sufficient.		4 see lattices of atoms through the semiconductor field.
09:54:19	5 Go ahead.	09:57:03	5 That's its strength. You can see through it. Makes it
	6 THE WITNESS: Yes, I have.		6 handy with asbestos because you're always looking at
	7 BY MR. MAIMON:		7 internal structure.
	8 Q. What's your opinion?		8 Crystalline. You can get diffraction patterns
	9 A. That she was.		9 and understand what the crystals are. You can do
09:54:23	10 Q. Let's -- before we talk about the bases, let's	09:57:18	10 microchemistry. Its weakness is you can't put much in
	11 talk about microscopes. You mentioned that you have		11 there. 5,000 pound microscope, and the sample grid --
	12 microscopes in your laboratory. Tell us about the		12 probably already heard about, I don't know -- you can
	13 different types of microscopes and what types they are.		13 fit on your finger. So you can only look at very small
	14 A. Well, we have three basic types -- well, two		14 amounts of material.
09:54:38	15 basic types.	09:57:36	15 The last one we have is scanning electron
	16 One microscope uses light as to magnify the		16 microscope. Again, I'll use my pilot green fiber.
	17 area of interest, usually a slide of some sort, has		17 Instead of going through the sample, the scanning
	18 glass lenses. And it's a very useful instrument. We		18 microscope scans with the beam over it. Sort of like
	19 have a number of them. But it is limited somewhat		19 the old days how the TVs work, but not anymore. And as
09:54:56	20 because of you're using light. Think of light as a	09:57:53	20 it goes over, that electron beam hitting that sample
	21 wave, and I'm exaggerating, of course, but it's --		21 has enough energy to cause electrons to jump out.
	22 typical wavelength of light is this big (indicating).		22 And if it's on the top, it's going to get hit
	23 And I'm trying to find something that big. Makes it		23 more, get more electrons; on the sides, less, and
	24 almost impossible.		24 that's how you see it. It's like resolution.
09:55:13	25 So it's a very good workhorse, has its	09:58:08	25 So think of an x-ray. Where the x-ray is going
Page 55		Page 57	
	1 strengths. Its weakness is resolution of smaller,		1 through the skin part, a lot of it can go through, and
	2 thinner fibers like you find in asbestos, just		2 on the bone, it impedes it, so you get the contrast
	3 individual fibers can't do it. In my opinion.		3 built up.
	4 The other two instruments, main instruments,		4 Ours is a field emission scanning electron
09:55:34	5 are -- that we use is what we call "electron	09:58:24	5 microscope. In the old days, you could say, well, the
	6 microscopes." One is a transmission electron		6 SEM can never get up to those high mags like the TEM.
	7 microscope and the T of that part says "transmission."		7 Now they can.
	8 So these are handy. Looks like a fiber thing.		8 And those were the three types of microscopes
	9 So if you have -- you have a -- you use an		9 we use. And specifically for asbestos.
09:55:50	10 electron beam, typically a hundred, 120,000 volts. And	09:58:38	10 Q. And with regard to those, can you give us an
	11 the energy hitting the filament where the electrons		11 estimate or a feel for how much a -- one of those TEMs,
	12 come out causes it to literally jump. And then there's		12 the new ones, or the scanning electron microscopes, how
	13 a certain charge, negative, that pulls it down. Then		13 much do those cost?
	14 you have a set of glass lenses to focus. You have		14 A. The brand new field emission Hitachi 8230 with
09:56:11	15 electromagnetic lenses that use the magnetic field to	09:58:58	15 the -- was \$1.1 million.
	16 squeeze all these electrons into a little beam.		16 The brand new transmission electron microscope
	17 Then it goes through your samples transmitting.		17 was \$750,000. So you're close to, with everything,
	18 So it's usually up here somewhere. And you're looking		18 \$2 million -- we call them "tools" -- for two new
	19 at it down here (indicating).		19 tools.
09:56:26	20 The strengths are, since you're using electrons	09:59:14	20 Q. And do you -- or does MAS charge for your time
	21 to image what you're interested in, where if my		21 in testing products, doing exposure assessments,
	22 wavelength of light is this big, I could have an		22 reviewing documents, depositions, giving depositions,
	23 electron sitting on my fingers, still wouldn't be able		23 testifying in trial?
	24 to see it. So you can see much smaller things. So.		24 A. I'll preface that by saying we have
09:56:43	25 We had labs in the semiconductor field for a	09:59:34	25 41 employees that expect to get paid every two weeks.

Page 58	Page 60
<p>09:59:50 1 We have insurance. We have overhead. We have 2 electricity bills. We have Workman's Comp insurance. 3 When the scientists go crazy and start looking at a 4 brand new field emission SEM, we have to look at, okay, 5 how are we going to pay for this. 6 So the answer to your question is: Of course. 7 Q. And have billings for your services -- or MAS 8 services in litigation over the 30 years that you've 9 been doing this work totalled about \$30 million? 10:00:07 10 A. Yes, our fees have totalled \$30 million in 11 30 years. 12 Q. If someone were to say that plaintiff's 13 lawyers -- and you've made \$30 million off of 14 plaintiff's lawyers, would that be accurate? 10:00:17 15 A. Personally? 16 Q. Yes. 17 A. No. I think you like me, but you don't like me 18 that well. 19 Q. With regard to the income that MAS gets from 10:00:31 20 the services that it gives to lawyers involve -- 21 involving litigation issues, how does that break out 22 between plaintiff's lawyers who retain you or defense 23 lawyers who retain you? 24 A. It's -- it was a little bit more on the defense 10:00:51 25 side, but now it's more even. Maybe a little bit more</p>	<p>1 THE WITNESS: Yes, Your Honor. 2 I've reviewed the testimony, I've reviewed the 3 depositions, I've reviewed J&J documents where they 4 specifically state, this is -- this is the country 10:02:35 5 where the Chungju talc was sold to, which included the 6 Philippines. 7 BY MR. MAIMON: 8 Q. And it included companies -- or places like 9 Thailand, Singapore, Japan as well; correct? 10:02:50 10 A. Hong Kong. 11 Q. Yes. 12 A. Essentially we call it the Asian talc for the 13 period of time that it was sourced from that mine in 14 Korea. 10:02:57 15 Q. And have you tested samples of that Johnson's 16 Baby Powder from that Asian talc? 17 A. Yes, sir, I have. 18 Q. Now let's just talk about that. 19 Do you have an opinion with reasonable 10:03:06 20 scientific certainty as to whether the Korean talc used 21 in Johnson's Baby Powder, sold in the Philippines in 22 the 1966 to 1968 time period contained asbestos? 23 A. I do have an opinion. 24 Q. What's your opinion? 10:03:19 25 MR. ASHBY: Foundation.</p>
Page 59	Page 61
<p>1 on plaintiff's side now. 2 Q. Want to make sure I have what I need. 3 So let's talk about Susan Leavitt. And with 4 regard to Mrs. Leavitt, did you review her mother -- 10:01:13 5 her testimony, her deposition testimony, and her 6 mother's deposition testimony? 7 A. Yes, sir. I read both volumes of Teresa's 8 depositions and I've reviewed the mother's depositions. 9 Q. And with regard to that, did you see that the 10:01:31 10 family lived in the Philippines from Teresa's birth in 11 1966, July 4, 1966, for a period of about 18 months? 12 A. Yes, sir. Then from there she moved to 13 California. I think San Francisco initially, then to 14 the Fremont area. 10:01:48 15 Q. And have you reviewed Answers to 16 Interrogatories from Johnson & Johnson as well as the 17 testimony of Dr. John Hopkins, the corporate 18 representative for Johnson & Johnson, that the 19 Johnson's Baby Powder sold in the Philippines during 10:02:04 20 that time period was sourced from the Korean mines, the 21 Chungju -- Chungju mine and sold by a company called 22 Il Shin Industrial? 23 MR. ASHBY: Objection. Hearsay. Foundation. 24 MR. SATTERLEY: Admission of a party opponent. 10:02:27 25 THE COURT: Overruled.</p>	<p>1 THE WITNESS: That it does. 2 MR. ASHBY: Objection. Foundation. 3 THE COURT: Overruled. 4 You may state your opinion. 10:03:26 5 THE WITNESS: My opinion is that it has 6 regulated asbestos in that mine. 7 BY MR. MAIMON: 8 Q. And can you tell us the bases for that opinion? 9 A. We'll start with that I analyzed historical 10:03:38 10 Johnson & Johnson -- Johnson's Baby Powder containers 11 for the source of the talc was from the Korean mine. 12 I've also researched and read peer-reviewed 13 publications in the scientific literature that 14 characterize that mine and found -- and stated the 15 exact same thing I'm stating now in those publications. 16 And I've looked at other documents that are 17 from the -- some of the suppliers and some of the other 18 companies that actually state themselves, this had 19 asbestos, fibrous tremolite, in it. 10:03:56 20 MR. ASHBY: Your Honor, move to strike hearsay. 21 THE COURT: Overruled. 22 BY MR. MAIMON: 23 Q. Now, let's talk about your testing of the -- of 24 the samples. 10:04:14 25 MR. MAIMON: May I approach, Your Honor? 10:06:07</p>

16 (Pages 58 to 61)

Page 62		Page 64	
10:06:21	<p>1 THE COURT: You may.</p> <p>2 MR. MAIMON: Thank you.</p> <p>3 (Whereupon, Plaintiff's Exhibit E-0519.36 was</p> <p>4 marked for identification.)</p> <p>5 (Whereupon, Plaintiff's Exhibit E-0519.38 was</p> <p>6 marked for identification.)</p> <p>7 (Whereupon, Plaintiff's Exhibit E-0519.91 was</p> <p>8 marked for identification.)</p> <p>9 (Whereupon, Plaintiff's Exhibit E-0519.119 was</p> <p>10 marked for identification.)</p> <p>11 BY MR. MAIMON:</p> <p>12 Q. Dr. Longo, I'm going to hand to you what I have</p> <p>13 marked as Plaintiff's Exhibit E-0519.36, .38, .91, and</p> <p>14 .119.</p> <p>15 And do you recognize those as samples for</p> <p>16 pictures of a bottle of this Asian talc that you tested</p> <p>17 as well as photographs of structures that you</p> <p>18 identified under the microscope with regard to the</p> <p>19 testing that you performed on this bottle?</p> <p>20 A. Yes, sir, it is.</p> <p>21 MR. MAIMON: Your Honor, we would offer those</p> <p>22 exhibits into evidence.</p> <p>23 MR. ASHBY: Objection. Foundation. Hearsay.</p> <p>24 THE COURT: Let's go one by one and establish</p> <p>25 foundation.</p>	10:08:35	<p>1 We received samples that they took out of the</p> <p>2 container, and I have the chain of custodies that show</p> <p>3 exactly the day they split it, how much, et cetera.</p> <p>4 MR. MAIMON: Your Honor, we would offer these</p> <p>5 into evidence.</p> <p>6 MR. ASHBY: Same objection.</p> <p>7 THE COURT: Overruled.</p> <p>8 We will admit them, too, in evidence</p> <p>9 Exhibits 519.36, .38.</p> <p>10 (Whereupon, Plaintiff's Exhibit E0519.36 was</p> <p>11 received into evidence.)</p> <p>12 (Whereupon, Plaintiff's Exhibit E0519.38 was</p> <p>13 received into evidence.)</p> <p>14 THE COURT: We haven't talked about 91 and 119</p> <p>15 yet.</p> <p>16 BY MR. MAIMON:</p> <p>17 Q. With regard to .91 and .119, are those pictures</p> <p>18 that you took under the microscope of what you found in</p> <p>19 this sample of Johnson's Baby Powder?</p> <p>20 A. The one with the color, that's the polarized</p> <p>21 light microscope. That was taken in my facility by,</p> <p>22 you know, our scientists, and then the next one is a</p> <p>23 transmission electron microscope. An analytical TEM</p> <p>24 photograph.</p> <p>25 MR. MAIMON: Your Honor, we would offer those</p>
Page 63		Page 65	
10:07:18	<p>1 MR. MAIMON: Sure.</p> <p>2 BY MR. MAIMON:</p> <p>3 Q. With regard to these pictures, the two</p> <p>4 photographs, .36 and .38, are those photographs that</p> <p>5 were supplied to you together with samples of talc that</p> <p>6 were produced by Johnson & Johnson and which you</p> <p>7 analyzed?</p> <p>8 A. Yes, sir, it is.</p> <p>9 Q. And do you have -- do you have chains of</p> <p>10 custody with regard to those samples -- with regard to</p> <p>11 those samples having been produced by Johnson &</p> <p>12 Johnson?</p> <p>13 A. Yes, sir. These photographs are the exact same</p> <p>14 photographs that I have for that particular sample. I</p> <p>15 checked their chains of custody when Johnson & Johnson</p> <p>16 sampled out of these containers and then ultimately</p> <p>17 sent them to me.</p> <p>18 These photographs have my numbers on them.</p> <p>19 Specifically, if you looked at M69248, on the bottom is</p> <p>20 our laboratory tracking number for this particular</p> <p>21 sample. So these photographs were taken by my</p> <p>22 laboratory and I reviewed these photographs.</p> <p>23 Q. And were these produced by Johnson & Johnson in</p> <p>24 litigation out of their historical supplies?</p> <p>25 A. Yes, sir. We did not receive the container.</p>	10:09:30	<p>1 into evidence.</p> <p>2 MR. ASHBY: No objection.</p> <p>3 THE COURT: Admitted.</p> <p>4 (Whereupon, Plaintiff's Exhibit E0519.91 was</p> <p>5 received into evidence.)</p> <p>6 (Whereupon, Plaintiff's Exhibit E0519.119 was</p> <p>7 received into evidence.)</p> <p>8 BY MR. MAIMON:</p> <p>9 Q. So let's just talk about how you did all this,</p> <p>10 and could you tell us the process that you went in to</p> <p>11 testing these products -- and we're going to talk about</p> <p>12 others -- did you employ the same process as far as the</p> <p>13 preparation of the samples and the analysis of the</p> <p>14 samples?</p> <p>15 A. Yes.</p> <p>16 Q. Can you describe it for us?</p> <p>17 A. The basic instruments, tools that we use to</p> <p>18 analyze the cosmetic talc from these samples was the</p> <p>19 polarized light microscope, as well as the analytical</p> <p>20 transmission electron microscope, as well as XRD, or</p> <p>21 x-ray diffraction, that we sent to another laboratory.</p> <p>22 The type of polarized light analysis we did,</p> <p>23 we followed two standard -- international standard</p> <p>24 organization procedures for the PLM and TEM, and one of</p> <p>25 the PLMs we followed a peer-reviewed published protocol</p>

17 (Pages 62 to 65)

Page 66

Page 68

1 in 1989-1990 that is now known as the "Blount PLM
2 method," by Alice Blount.
3 Q. Is that Dr. Alice Blount?
4 A. Correct. So the polarized light microscope we
10:10:42 5 looked at one set of samples where we did not do heavy
6 liquid separation.
7 Then we looked at polarized light microscopy
8 again using Alice Blount's technique of heavy liquid
9 separation.
10:10:53 10 And then for the TEM, we used the ISO method,
11 the 22262-2 method.
12 Q. You mentioned heavy liquid separation and you
13 assisted us in preparing an animation to show the
14 members of the jury what the heavy liquid separation
10:11:09 15 you did is.
16 A. That's correct.
17 Q. Is this the start of it?
18 A. That's the start of it.
19 MR. MAIMON: Permission to publish, Your Honor?
10:11:16 20 MR. SATTERLEY: For demonstrative purposes
21 only, Your Honor.
22 MR. ASHBY: We haven't seen this yet.
23 MR. MAIMON: This was shown in opening
24 statement.
10:11:20 25 MR. DEJARDIN: I would object to it as hearsay.

1 screen.
2 MR. MAIMON: I don't know why it's off, John.
3 BY MR. MAIMON:
4 Q. Is this animation --
10:12:37 5 MR. MAIMON: Do we have it back up?
6 BY MR. MAIMON:
7 Q. Does this animation fairly and accurately
8 depict the -- fairly and accurately depict the heavy
9 liquid separation technique that you employed?
10:12:57 10 A. It's a good demonstrative to kind of get a
11 visual of what's going on in the process and why it's
12 so valuable for what we're doing.
13 MR. MAIMON: Permission to publish, Your Honor.
14 THE COURT: You may publish. This is for
10:13:10 15 demonstration purposes only. This is not being
16 admitted into evidence.
17 You may show it.
18 BY MR. MAIMON:
19 Q. If you can just tell us what's happening here?
10:13:21 20 A. That's the centrifuge tube. If you get rid of
21 that -- and that's the pipette. It's a heavy liquid,
22 so you have the talc in there. And now it will be
23 mixed. There we go. Keep mixing a little more. No.
24 Didn't do it. And you put it in a centrifuge. And so
10:13:42 25 what happens is the density of the liquid causes the

Page 67

Page 69

1 He didn't prepare it.
2 THE COURT: It is being offered as
3 demonstrative. Let's have a foundation about how this
4 was prepared and what it purports to show before we
10:11:31 5 show it.
6 MR. MAIMON: Sure.
7 BY MR. MAIMON:
8 Q. Dr. Longo, did you assist us in instructing us
9 as to what the method you used was to prepare the
10:11:42 10 samples by heavy liquid separation?
11 A. Yes. I was telling you that I had to show it
12 sort of spinning. You had to show that there was a
13 mixture of two things we could recognize. Then after
14 the spinning saying the one -- particles would be at a
10:11:59 15 different location at the bottom. And that's how heavy
16 liquid density works.
17 Liquid density means if you throw cork onto
18 water, it floats. Cork has a lighter density. If you
19 throw a ball bearing into water, it sinks, because it
10:12:15 20 has a much higher density. So you got a bunch of stuff
21 all mixed up and you want to separate them, you pick a
22 density that will make one float and one go to the
23 bottom of the centrifuge, too. And that's what we did
24 here.
10:12:28 25 Q. And was this animation -- it's no longer on the

1 talc to float to the top. Talc has a density of 2.5 or
2 so, 2.6 grams per cubic centimeter, meaning every cubic
3 centimeter, like a sugar cube of talc, will weigh
4 2.6 grams.
10:14:00 5 What we're looking for has a density of between
6 2.8 -- we don't find those -- up to 3.0, 3.2. It
7 pushes it all down to the bottom.
8 Now, we can literally, what we call "reharvest
9 the tip." You can stick a pipette in, take it out, a
10:14:23 10 little -- thin, little blasts. Like a stopper. What
11 we do is we flash freeze it in liquid nitrogen and cut
12 the tip off and then use that to -- makes it a lot
13 easier. We don't think we get as much talc in it.
14 And that's simply how it works. It's -- heavy
10:14:39 15 liquid separation of different minerals has been used
16 for -- you can go back to the '30s and '40s --
17 flotation. It's a well understood procedure.
18 Q. Okay. And if we can now take a look at
19 0519.91.
10:15:04 20 Can you tell us what it is that you found here
21 and what significance it was with regard --
22 A. If you could just turn it.
23 Q. Sure.
24 A. There we go.
10:15:21 25 Q. And tell us what this is. And tell us what

18 (Pages 66 to 69)

Page 70	Page 72
<p>1 relevance it is to the question that I asked you about</p> <p>2 the Korean talc.</p> <p>3 A. This is an optical micrograph of one of the</p> <p>4 samples that we analyzed by the Alice Blount polarized</p> <p>10:15:41 5 light microscopy method. And in this particular</p> <p>6 photograph, the nice -- the really cool colors, is</p> <p>7 we're doing what's known as the "sign of elongation,"</p> <p>8 which means, as you rotate the fiber, it will</p> <p>9 turn typical -- or bundle in the case -- you're all</p> <p>10:15:59 10 seeing bundles here. It measures -- the color will</p> <p>11 measure the speed of the light going through and around</p> <p>12 the crystal. And you have a -- certain colors for</p> <p>13 certain types of asbestos. So it's one of the</p> <p>14 diagnostics for things that we do to go through the</p> <p>10:16:16 15 crystalline structure measurements and determine what</p> <p>16 type of asbestos it is. (Reporter clarification.) I</p> <p>17 think I said what kind of asbestos.</p> <p>18 So this is a filter that's put in the polarized</p> <p>19 light microscope. It's a gypsum filter, I think, in</p> <p>10:16:36 20 it. It restricts light to a certain wavelength. I</p> <p>21 think these particular ones are 530 nanometers. And</p> <p>22 you get these beautiful colors. Some of the -- you</p> <p>23 know, it's aesthetic -- these are the kind of things I</p> <p>24 like to take pictures of, and if I had my way at my</p> <p>10:16:54 25 house, I'd have them on the wall. That's not going to</p>	<p>1 Then you check the refractive indices, meaning</p> <p>2 this is in a 1.605 fluid and not under sign of</p> <p>3 elongation but under dispersion staining --</p> <p>4 Q. You'll have examples of that?</p> <p>10:18:35 5 A. Yeah. Under dispersion staining, you look at</p> <p>6 the colors for 1.605, you look at the temperature in</p> <p>7 the room, the monitor, and you check and see if you</p> <p>8 have either angular or concentric optical microscope,</p> <p>9 then you literally look at a chart of what wavelength</p> <p>10:18:54 10 at what color of a refractive indices. And they're all</p> <p>11 very distinct.</p> <p>12 And the last thing they do is to see if it</p> <p>13 melts, because -- for one type of polymer will look</p> <p>14 like chrysotile, but we're not dealing with that here.</p> <p>10:19:07 15 And if you look at our sheets, you will see all</p> <p>16 these optical properties that the analyst has to verify</p> <p>17 what he's dealing with.</p> <p>18 Q. So did you identify asbestos by PLM using the</p> <p>19 heavy liquid separation in the sample?</p> <p>10:19:21 20 A. We did.</p> <p>21 Q. And these are just examples of some of the</p> <p>22 structures that you identified; correct?</p> <p>23 A. Correct.</p> <p>24 Q. And just briefly, we'll put up 0519.119, and if</p> <p>10:19:34 25 you can explain for us -- I don't know why that's a</p>
Page 71	Page 73
<p>1 happen.</p> <p>2 Q. You have down here, actinolite-tremolite</p> <p>3 elongation at 200 times.</p> <p>4 A. Correct.</p> <p>10:17:00 5 Q. How do you identify this as -- well, first of</p> <p>6 all, what's -- what do you mean by</p> <p>7 tremolite-actinolite?</p> <p>8 A. Tremolite-actinolite is part of the solid</p> <p>9 solution series. And you have to understand, this is</p> <p>10:17:11 10 only one test out of four. You kind of go down the</p> <p>11 line. You have to determine refractive indices, fluid.</p> <p>12 You have to determine the sign of extinction, meaning</p> <p>13 these -- these microscopes have two polarizing lights,</p> <p>14 one -- you know, in two different directions. And once</p> <p>10:17:32 15 you have a bundle of amphibole asbestos like this, you</p> <p>16 have to rotate it to the north-south position to the</p> <p>17 polarizers. So if you have this one here and this one</p> <p>18 here (indicating), this one needs to lay -- this fiber</p> <p>19 needs to lay like this.</p> <p>10:17:51 20 If it is a monoclinic type and you start</p> <p>21 rotating it, it goes extinct under cross polarization,</p> <p>22 meaning you can't see it. We call it "oblique." If it</p> <p>23 is the anthophyllite type, it won't do that until you</p> <p>24 get it this way. That's one test.</p> <p>10:18:12 25 Then you check the birefringence.</p>	<p>1 weird color here.</p> <p>2 But what is that?</p> <p>3 A. Well, that's a micrograph, optical -- it's a</p> <p>4 photograph of a tremolite fiber. Actually, that's a</p> <p>10:19:55 5 bundle.</p> <p>6 Well, you got rid of the green.</p> <p>7 And it's right next to a grid opening, and that</p> <p>8 one is 9.1 microns long and the bundle is 1.3 microns</p> <p>9 wide.</p> <p>10:20:08 10 The holes are from the replica of the filter.</p> <p>11 After we get done with the heavy liquid separation, we</p> <p>12 have to filter it.</p> <p>13 And right above it is a talc particle.</p> <p>14 And that's an asbestos bundle that we have</p> <p>10:20:25 15 detected in this particular sample.</p> <p>16 Q. Okay.</p> <p>17 MR. MAIMON: May I approach, Your Honor?</p> <p>18 THE COURT: You may.</p> <p>19 BY MR. MAIMON:</p> <p>10:22:10 20 Q. Dr. Longo, I'm going to hand you what I've</p> <p>21 marked as Exhibit E-0519.44, .134, .136, .140, .150,</p> <p>22 and .156.</p> <p>23 And do you recognize the first one, .44, as</p> <p>24 another bottle of Korean talc that was sent to you from</p> <p>10:22:43 25 the Johnson & Johnson historical samples and -- which</p>

Page 74	Page 76
<p>1 you have a chain of custody confirming that for?</p> <p>2 A. Yes.</p> <p>3 Q. And are the other pages of .134, 136, 140, 150,</p> <p>4 and 156 photographs, either through light microscope or</p> <p>10:23:01 5 transmission electron microscope, of asbestos</p> <p>6 structures that you identified in that sample.</p> <p>7 A. Yes, sir.</p> <p>8 MR. MAIMON: Your Honor, we would offer these</p> <p>9 into evidence.</p> <p>10:23:11 10 MR. ASHBY: No objection.</p> <p>11 THE COURT: I'm sorry?</p> <p>12 MR. ASHBY: No objection.</p> <p>13 THE COURT: All of these documents -- 519.44,</p> <p>14 134, 136, 140, 150, and 156 -- are admitted.</p> <p>15 (Whereupon, Plaintiff's Exhibit E0519.44 was</p> <p>16 received into evidence.)</p> <p>17 (Whereupon, Plaintiff's Exhibit E0519.134 was</p> <p>18 received into evidence.)</p> <p>19 (Whereupon, Plaintiff's Exhibit E0519.136 was</p> <p>20 received into evidence.)</p> <p>21 (Whereupon, Plaintiff's Exhibit E0519.140 was</p> <p>22 received into evidence.)</p> <p>23 (Whereupon, Plaintiff's Exhibit E0519.150 was</p> <p>24 received into evidence.)</p> <p>25 (Whereupon, Plaintiff's Exhibit E0519.156 was</p>	<p>1 So if this was anthophyllite instead of</p> <p>2 tremolite-actinolite, you wouldn't see anything there.</p> <p>3 Literally it goes extinct at parallel extinctions.</p> <p>4 Tremolite-actinolite you just turn it anywhere from 2</p> <p>10:24:49 5 to 5 degrees.</p> <p>6 All this bright stuff you see around here is</p> <p>7 talc particles.</p> <p>8 Q. So, again, this is another asbestos structure</p> <p>9 you identified in the sample; correct?</p> <p>10:24:58 10 A. Correct. It's a bundle.</p> <p>11 Q. And just -- if you look at the next picture,</p> <p>12 .136.</p> <p>13 You mentioned bundles. What does this show us</p> <p>14 as far as the bundles of asbestos structures that you</p> <p>10:25:16 15 found in this sample of baby powder?</p> <p>16 A. It's -- this one -- it's a little hard to see</p> <p>17 it on here, but this structure is two -- this bundle is</p> <p>18 a little bit over 200 microns long. The individual</p> <p>19 fibers of these bundles are about .2 to .4, the</p> <p>10:25:40 20 individual fibers. So you're dealing with, in this</p> <p>21 particular one, the individual fibers in the bundle</p> <p>22 are, on the average, about 300 to 1. So this is a very</p> <p>23 fibrous bundle, which puts it in -- if you were going</p> <p>24 to just accept the counting rules as they are before us</p> <p>10:26:05 25 like microscopy, this aspect ratio meets one of the</p>
Page 75	Page 77
<p>1 received into evidence.)</p> <p>2 BY MR. MAIMON:</p> <p>3 Q. And, again, it's your understanding, Doctor,</p> <p>4 that this is a -- the sample with the chain of custody</p> <p>10:23:27 5 indicates that it would have been the Korean talc that</p> <p>6 we talked about that supplied this; correct?</p> <p>7 A. That is correct.</p> <p>8 Q. I just want to go through a couple of pictures</p> <p>9 just to show us some things we didn't see before.</p> <p>10:23:39 10 Here is another kind of picture. What does it</p> <p>11 show us?</p> <p>12 THE COURT: What are you showing again.</p> <p>13 MR. MAIMON: This is .134.</p> <p>14 Thank you, Your Honor.</p> <p>10:23:51 15 THE WITNESS: If you could -- I think if you</p> <p>16 increase the magnification just a tad. There we go.</p> <p>17 This is another actinolite tremolite bundle,</p> <p>18 and this is called "dispersion staining," where -- I</p> <p>19 don't know where the "staining" came from because you</p> <p>10:24:08 20 don't do any staining, but dispersion staining is</p> <p>21 literally you take the aperture under the stage and</p> <p>22 close it down to reduce the light, and this allows you</p> <p>23 to look for the colors of -- in the refractive</p> <p>24 indices -- this is under 1.605 -- fluids, and it also</p> <p>10:24:32 25 allows you to -- the extinction angle.</p>	<p>1 criteria for an asbestiform. And every one of these</p> <p>2 analysis where we found asbestos structures like this,</p> <p>3 all the aspect ratios were over 20 to 1.</p> <p>4 Q. And, with regard to the asbestos that your</p> <p>10:26:24 5 laboratory identified in the Korean talc samples, was</p> <p>6 it asbestiform?</p> <p>7 A. Yes.</p> <p>8 Q. And...</p> <p>9 One second.</p> <p>10:28:33 10 MR. MAIMON: May I approach, Your Honor?</p> <p>11 THE COURT: You may.</p> <p>12 MR. MAIMON: Thank you, Your Honor.</p> <p>13 (Whereupon, Plaintiff's Exhibit E0519.67 was</p> <p>14 marked for identification.)</p> <p>15 (Whereupon, Plaintiff's Exhibit E0519.69 was</p> <p>16 marked for identification.)</p> <p>17 (Whereupon, Plaintiff's Exhibit E0519.235 was</p> <p>18 marked for identification.)</p> <p>19 (Whereupon, Plaintiff's Exhibit E0519.241 was</p> <p>20 marked for identification.)</p> <p>21 (Whereupon, Plaintiff's Exhibit E0519.243 was</p> <p>22 marked for identification.)</p> <p>23 (Whereupon, Plaintiff's Exhibit E0519.252 was</p> <p>24 marked for identification.)</p> <p>25 (Whereupon, Plaintiff's Exhibit E0519.261 was</p>

Page 78	Page 80
<p>1 marked for identification.)</p> <p>2 BY MR. MAIMON:</p> <p>3 Q. I'm going to hand you, Dr. Longo, what I've</p> <p>4 marked as Exhibit E-0519.67, .69, .235, .241, .243,</p> <p>10:28:50 5 .252, and .261.</p> <p>6 And I'm going to ask you, does this -- are</p> <p>7 these photographs, the first two, of another bottle of</p> <p>8 Asian Johnson's Baby Powder produced by Johnson &</p> <p>9 Johnson with the chains of custody showing that they</p> <p>10:29:09 10 were produced and have the Korean talc in them and,</p> <p>11 together with the photographs, both by PLM and TEM, of</p> <p>12 the asbestos structure that you found in them?</p> <p>13 A. Yes.</p> <p>14 MR. MAIMON: Your Honor, I would offer these</p> <p>10:29:25 15 into evidence.</p> <p>16 MR. ASHBY: No objection.</p> <p>17 THE COURT: All admitted.</p> <p>18 (Whereupon, Plaintiff's Exhibit E0519.67 was</p> <p>19 received into evidence.)</p> <p>20 (Whereupon, Plaintiff's Exhibit E0519.69 was</p> <p>21 received into evidence.)</p> <p>22 (Whereupon, Plaintiff's Exhibit E0519.235 was</p> <p>23 received into evidence.)</p> <p>24 (Whereupon, Plaintiff's Exhibit E0519.241 was</p> <p>25 received into evidence.)</p>	<p>1 A. Six of the seven.</p> <p>2 Q. And what concentrations of asbestos did you</p> <p>3 find in those samples where you found asbestos?</p> <p>4 A. Using the polarized light microscopy, the</p> <p>10:30:38 5 regular -- I now call the "regular polarized light</p> <p>6 microscope method" where you don't use heavy liquid</p> <p>7 density, every sample the amount of asbestos present</p> <p>8 was below our detection limit. So nothing was</p> <p>9 detected.</p> <p>10:30:52 10 For the Blount PLM, six of the seven were</p> <p>11 positive, and the concentration of the</p> <p>12 tremolite-actinolite in there range from a, what we</p> <p>13 call "below .1 percent up to .3 percent estimated</p> <p>14 weight" by the Blount PLM of actinolite-tremolite.</p> <p>10:31:18 15 Q. Now, with below .1 percent, could you call that</p> <p>16 trace?</p> <p>17 A. Typically, we call trace below .1 percent.</p> <p>18 Q. Were you able to determine, even on that, where</p> <p>19 you would, on a weight percentage basis, it would be</p> <p>10:31:32 20 called trace, were you able to calculate the number of</p> <p>21 fibers per gram in the samples?</p> <p>22 A. Yes, sir. We have two of the six positives</p> <p>23 where we called it trace by the Blount PLM method, and</p> <p>24 one of the below trace has a concentration of 29,000</p> <p>10:31:57 25 tremolite asbestos fibers in bundles per gram, and the</p>
Page 79	Page 81
<p>1 (Whereupon, Plaintiff's Exhibit E0519.243 was</p> <p>2 received into evidence.)</p> <p>3 (Whereupon, Plaintiff's Exhibit E0519.252 was</p> <p>4 received into evidence.)</p> <p>5 (Whereupon, Plaintiff's Exhibit E0519.261 was</p> <p>6 received into evidence.)</p> <p>7 BY MR. MAIMON:</p> <p>8 Q. Dr. Longo, did you identify fibrous tremolite</p> <p>9 in the Korean talc?</p> <p>10:29:36 10 A. Yes.</p> <p>11 Q. And did you identify fibrous talc in the Korean</p> <p>12 talc?</p> <p>13 A. Yes.</p> <p>14 Q. Can you tell us -- we've heard about cleavage</p> <p>10:29:44 15 fragments.</p> <p>16 When you identified the structures that you</p> <p>17 called asbestos, were they cleavage fragments?</p> <p>18 A. No.</p> <p>19 Q. The -- tell us about the concentration -- or</p> <p>10:29:55 20 the concentrations of asbestos that -- first of all,</p> <p>21 how many samples of Korean talc did you analyze?</p> <p>22 A. We received six separate samples from six --</p> <p>23 excuse me -- seven separate containers.</p> <p>24 Q. And in how many of them did your methodology,</p> <p>10:30:14 25 utilizing it, did you detect asbestos?</p>	<p>1 other trace one was at 45,000 asbestos fibers in</p> <p>2 bundles per gram of tremolite.</p> <p>3 Q. And despite the fact that that might be called</p> <p>4 trace by PLM, if you find those concentrations by TEM,</p> <p>10:32:18 5 would normal use of such a product result in a</p> <p>6 substantial exposure to asbestos?</p> <p>7 MR. ASHBY: Objection. Foundation.</p> <p>8 THE COURT: Let's lay some further foundation.</p> <p>9 MR. MAIMON: Sure.</p> <p>10:32:36 10 BY MR. MAIMON:</p> <p>11 Q. Doctor, have you considered from an industrial</p> <p>12 hygiene perspective, an exposure assessment of using --</p> <p>13 of normal use of such a product?</p> <p>14 A. Yes, sir, I have.</p> <p>10:32:45 15 Q. And have you taken into account the studies of</p> <p>16 exposure assessment that you've done as well as the</p> <p>17 literature on exposure assessment for such a product?</p> <p>18 A. Yes, I have.</p> <p>19 Q. And, based upon that, are you able to reach an</p> <p>10:32:58 20 opinion with reasonable scientific certainty as to</p> <p>21 whether or not a product with -- by PLM trace but the</p> <p>22 concentrations that you mentioned of fibers per gram,</p> <p>23 normal use would result in a substantial exposure to</p> <p>24 asbestos?</p> <p>10:33:15 25 MR. ASHBY: Same objection. Overbroad.</p>

Page 82

1 THE COURT: Overruled.
 2 THE WITNESS: Yes.
 3 BY MR. MAIMON:
 4 Q. What's your opinion?
 10:33:21 5 A. That it will at these concentrations.
 6 Q. Thank you.
 7 Now, moving on from Asia, did you --
 8 MR. MAIMON: Oh, okay.
 9 BY MR. MAIMON:
 10:33:29 10 Q. The other samples, the ones that weren't by PLM
 11 trace amounts, can you tell us what concentrations of
 12 fibers per gram there were on the positives?
 13 A. It ranged from -- let me go from low to high --
 14 35,000 to 65,000 fibers in bundles, primarily bundles
 10:33:52 15 of regulated asbestos.
 16 Q. Per gram?
 17 A. Per gram.
 18 Q. And just conversion, how many grams are there
 19 in an ounce?
 10:33:58 20 A. 28.
 21 Q. And so, if we're talking about 30,000 -- 40 --
 22 50,000 let's just talk about in round numbers, if
 23 you're talking about 50,000 fibers per gram, what we're
 24 now talking about, how many would that make in an
 10:34:19 25 ounce?

Page 83

1 A. Well, just because this will be a written
 2 record and I'll get teased about it, I'm going to use
 3 my calculator. If I'm wrong. So 50,000.
 4 What's your hypothetical again?
 10:34:31 5 Q. How many would that -- per gram, how many would
 6 that make in an ounce?
 7 A. 1.4 million -- 1,400,000.
 8 Q. And if we're talking now about a 10-ounce
 9 bottle, how many fibers are we talking about for that
 10:34:46 10 10-ounce bottle?
 11 A. 14 million.
 12 MR. DEJARDIN: Foundation.
 13 THE COURT: Hold on a second.
 14 MR. ASHBY: Join.
 10:34:56 15 THE COURT: I'm sorry. I didn't hear the
 16 objection.
 17 MR. DEJARDIN: Objection. Foundation,
 18 Your Honor.
 19 THE COURT: Overruled.
 10:35:01 20 BY MR. MAIMON:
 21 Q. Now, I'd like to move on from Korea to Vermont.
 22 Did you test samples of Johnson's Baby Powder
 23 containing Vermont talc?
 24 A. Sorry.
 10:35:13 25 Yes, sir, I have.

Page 84

1 Q. And did you consider Ms. Leavitt's use of
 2 Johnson's Baby Powder in the United States from 1968
 3 until she stopped using the product in 1998?
 4 A. Yes, sir, I did.
 10:35:27 5 Q. And was it your understanding that, during that
 6 time period, the source of talc for Johnson's Baby
 7 Powder were the Hammondsville, Argonaut, Rainbow, and
 8 Hamm mines in southern Vermont?
 9 MR. ASHBY: Leading. Foundation.
 10:35:45 10 THE COURT: Overruled.
 11 THE WITNESS: Yes. According to the
 12 documentation provided, that is a series of mines that
 13 were used in Vermont.
 14 BY MR. MAIMON:
 10:35:55 15 Q. Did you review the documents, internal
 16 documents from Johnson & Johnson and Imerys, concerning
 17 those mines?
 18 A. Yes, sir, I did.
 19 Q. And based upon -- first of all, based upon the
 10:36:06 20 internal documents from Johnson & Johnson and Imerys,
 21 do you have an opinion with reasonable scientific
 22 certainty as to whether the talc in those mines
 23 contains asbestos?
 24 A. I do.
 10:36:15 25 Q. What's your opinion?

Page 85

1 A. That it does.
 2 Q. And can you tell us -- did you review
 3 literature in that regard?
 4 A. Yes.
 10:36:22 5 Q. Did you review Johnson & Johnson, Imerys
 6 documents?
 7 A. Yes, I have.
 8 Q. Did you conduct your own testing on bottles of
 9 Johnson & Johnson Baby Powder produced out of
 10:36:33 10 historical samples by Johnson & Johnson to confirm
 11 that?
 12 A. Yes, sir, I did.
 13 Q. And what were your findings when you did your
 14 own testing -- first of all, did you use the same
 10:36:42 15 methods that you talked about with regard to the Asian
 16 talc?
 17 A. Yes.
 18 Q. And did you perform the same type of analysis:
 19 the PLM, the Blount PLM, the ISO 22262?
 10:36:53 20 A. TEM, yes, we did.
 21 Q. And can you tell us what your conclusion is
 22 with regard to your own testing and the types of
 23 asbestos that you found in the Johnson's Baby Powder?
 24 MR. ASHBY: Overbroad as to time.
 10:37:09 25 THE COURT: Overruled.

22 (Pages 82 to 85)

<p style="text-align: right;">Page 86</p> <p>1 THE WITNESS: Our tests show that we were -- on</p> <p>2 samples that were positive, we found both tremolite,</p> <p>3 regulated asbestos, what I -- the tremolite solid</p> <p>4 solution series, regulated asbestos. Anthophyllite,</p> <p>10:37:30 5 solid solution series, regulated asbestos. As well</p> <p>6 as -- one of the types of tremolites we found was</p> <p>7 richterite in one or two -- one or two regulated fibers</p> <p>8 of that. And we found it in various concentrations.</p> <p>9 So my opinion would be, yes, the Vermont Talc</p> <p>10:37:53 10 mines have regulated asbestos in them.</p> <p>11 BY MR. MAIMON:</p> <p>12 Q. And that regulated asbestos that you saw a</p> <p>13 reference to that in the documents?</p> <p>14 A. Yes.</p> <p>10:38:01 15 Q. And did you confirm by your own testing that it</p> <p>16 made its way into the final products?</p> <p>17 A. Yes, sir. I did.</p> <p>18 Q. Okay. The -- we'll talk a little bit about</p> <p>19 those, but I just want to cover one thing first.</p> <p>10:38:13 20 In addition to looking at samples yourself, did</p> <p>21 you validate the findings of J3 Resources Laboratory</p> <p>22 Mr. Lee Poye, who the jury has seen?</p> <p>23 A. Yes.</p> <p>24 Q. And tell us, did Mr. Poye come to your lab and</p> <p>10:38:28 25 did your laboratory look at his grids?</p>	<p style="text-align: right;">Page 88</p> <p>1 on that one. And so on, and so forth. It just makes</p> <p>2 the results, in my mind, more validated.</p> <p>3 Q. And, with regard to the samples that Mr. Poye</p> <p>4 had analyzed and you validated, did you calculate the</p> <p>10:40:10 5 concentration of asbestos in those samples in terms of</p> <p>6 fibers per gram?</p> <p>7 A. I did.</p> <p>8 Q. Can you tell us what those were, what the range</p> <p>9 of concentrations were?</p> <p>10:40:20 10 A. I can. As soon as I get to it.</p> <p>11 Q. Okay.</p> <p>12 A. The range of concentrations in his results was</p> <p>13 from 7,400 fibers/bundles per gram up to 95,000 fibers</p> <p>14 in bundles per gram of anthophyllite-type asbestos.</p> <p>10:40:47 15 Q. And with regard to those types of</p> <p>16 concentrations, based upon your experience and your own</p> <p>17 testing, would the normal use of a product containing</p> <p>18 those ranges of concentrations result in substantial</p> <p>19 exposure to asbestos?</p> <p>10:41:02 20 MR. ASHBY: Objection. Foundation. Overbroad.</p> <p>21 MR. DEJARDIN: Join.</p> <p>22 THE COURT: Overruled.</p> <p>23 THE WITNESS: In my opinion, yes.</p> <p>24 BY MR. MAIMON:</p> <p>10:41:08 25 Q. Okay.</p>
<p style="text-align: right;">Page 87</p> <p>1 A. Yes, he did.</p> <p>2 Q. And were you able to validate the asbestos</p> <p>3 structures that he found in the Shower to Shower</p> <p>4 samples that he analyzed?</p> <p>10:38:41 5 A. Yes. He had 11 positive samples out of the</p> <p>6 16 containers. We were able to validate 9 of those</p> <p>7 positive samples out of the 11.</p> <p>8 Q. And the one that you weren't able -- the ones</p> <p>9 that you weren't able to validate, what difficulty did</p> <p>10:38:56 10 you have?</p> <p>11 A. The carbon film on the TEM grids had ripped,</p> <p>12 because they're literally a hundred angstroms thick,</p> <p>13 and both of those samples had 1 fiber, 1 regulated</p> <p>14 asbestos fiber, and it just so happened that that grid</p> <p>10:39:15 15 opening had ripped. So we couldn't validate the TEM on</p> <p>16 2 of the positives. But the other 9 we were able to</p> <p>17 validate. We came to the same conclusion that he came</p> <p>18 to that this was regulated asbestos fibers in bundles.</p> <p>19 Q. And in science, or your field, Dr. Longo,</p> <p>10:39:31 20 what's the importance of laboratories cross-validating</p> <p>21 each other's results?</p> <p>22 A. The results then can be stronger. You have two</p> <p>23 independent labs saying, yes, that is a tremolite --</p> <p>24 that is an anthophyllite bundle. We're getting the</p> <p>10:39:50 25 similar sizes you are, and we agree with your finding</p>	<p style="text-align: right;">Page 89</p> <p>1 THE COURT: Counsel, if you're going to move to</p> <p>2 another topic, we'll take our break here.</p> <p>3 MR. MAIMON: We can take a break, Judge.</p> <p>4 THE COURT: We'll take it now.</p> <p>10:41:18 5 (Recess taken.)</p> <p>6 (Whereupon, the following proceedings were held</p> <p>7 outside the presence of the jury.)</p> <p>8 THE COURT: Counsel, somebody needed to talk to</p> <p>9 me?</p> <p>10:53:17 10 MR. SATTERLEY: Yes, Your Honor.</p> <p>11 THE COURT: Why don't you wait outside,</p> <p>12 Dr. Longo.</p> <p>13 MR. SATTERLEY: Your Honor, based upon the</p> <p>14 argument of counsel this morning, plaintiff would be</p> <p>10:53:30 15 agreeable to counsel examining Dr. Longo on Chinese</p> <p>16 talc if a limiting instruction is given that this would</p> <p>17 only relates to punitive damages, and we're not</p> <p>18 suggesting Your Honor say "punitive damages." But to</p> <p>19 give a limiting instruction to -- that it would only</p> <p>10:53:49 20 relate to, for a limited purpose, solely to whether</p> <p>21 defendant's conduct involved a continuing pattern and</p> <p>22 practice.</p> <p>23 That's what the CACI instruction says with</p> <p>24 regard to punitives, and that's the only reason they</p> <p>10:54:03 25 raised this issue this morning is they say they need</p>

Page 90	Page 92
<p>1 the jury as the judge, whether they continue to engage</p> <p>2 in this pattern and practice, and so the limiting</p> <p>3 instruction -- and Ms. Clancy just handed me this.</p> <p>4 This is admitted solely -- this testimony, if they</p> <p>10:54:18 5 start cross-examining on that, is admitted solely on</p> <p>6 whether defendant's conduct involved a continuing</p> <p>7 pattern and practice. This is not admitted or relevant</p> <p>8 as to whether the talcum product to which Mrs. Leavitt</p> <p>9 was exposed did not contain asbestos, Johnson & Johnson</p> <p>10:54:35 10 talc products did not use talc from the Vermont mines</p> <p>11 after 2003.</p> <p>12 So a very simple limiting instruction so that</p> <p>13 there's no confusion regarding the purpose of the</p> <p>14 admissibility of that cross-examination on the -- on</p> <p>10:54:52 15 the Chinese talc.</p> <p>16 MR. RICHMAN: Two things, Your Honor. One,</p> <p>17 we'll just have to take -- we haven't been provided a</p> <p>18 copy of the proposed limiting instruction, so we'll</p> <p>19 need to take a look at it and discuss it among counsel.</p> <p>10:55:02 20 The reason I asked to talk to the Court, I</p> <p>21 think the original question was, how has this door been</p> <p>22 opened earlier? The Court asked for some specific</p> <p>23 examples. And that's the issue I wanted to raise with</p> <p>24 the Court.</p> <p>10:55:13 25 There was two specific instances I wanted to</p>	<p>1 discontinuing use of talc from that ore body.'</p> <p>2 "Do you see that?"</p> <p>3 Then he goes on to say:</p> <p>4 "Answer: I see what is written, yes."</p> <p>10:56:49 5 MR. MAIMON: Can you just read --</p> <p>6 MR. RICHMAN: Let me -- let me finish my</p> <p>7 argument.</p> <p>8 So then also Mr. Satterley, not only in opening</p> <p>9 statement -- let me point that passage up -- on page 55</p> <p>10:57:03 10 said, quote, the evidence will be that Johnson &</p> <p>11 Johnson knew of the --</p> <p>12 MS. CLANCY: I'm sorry. I'm just trying to</p> <p>13 follow along with you.</p> <p>14 MR. RICHMAN: Sure. This is Mr. Satterley's</p> <p>10:57:11 15 opening statement. I believe it was January 9 --</p> <p>16 excuse me -- January 7th, on page 55.</p> <p>17 So the evidence will be that Johnson & Johnson</p> <p>18 knew of the asbestos risk and they continued to sell</p> <p>19 their product.</p> <p>10:57:29 20 And then later on, on page 58, he's talking in</p> <p>21 the context of Shower to Shower.</p> <p>22 MS. CLANCY: I'm sorry. I'm really trying to</p> <p>23 go as fast as I can. So 55, line what?</p> <p>24 MR. RICHMAN: I believe it's 18 through 23, and</p> <p>10:57:44 25 in 58, on the context of Shower to Shower, he stated at</p>
Page 91	Page 93
<p>1 raise with Your Honor -- actually, one with Mr. Maimon</p> <p>2 and one with Mr. Satterley -- with respect to --</p> <p>3 Court's indulgence -- Judge, with respect to</p> <p>4 Dr. Egilman when he was asked about warnings -- excuse</p> <p>10:55:32 5 me.</p> <p>6 MS. CLANCY: Could you give me what the date of</p> <p>7 it is?</p> <p>8 MR. RICHMAN: Sure.</p> <p>9 MS. CLANCY: Thank you.</p> <p>10:55:36 10 MR. RICHMAN: No problem.</p> <p>11 So, Your Honor, let me start with Mr. Maimon's</p> <p>12 question. When he was asking Mr. Hopkins -- and this</p> <p>13 was, I'll explain -- January 28th. The excerpt was --</p> <p>14 this was -- I think the Court may recall, there was an</p> <p>10:55:58 15 email that was shown which had an attachment about a</p> <p>16 \$13 million verdict or something like that. The</p> <p>17 attachment parts didn't come in and Mr. Maimon said he</p> <p>18 just wanted to ask about another portion of it. And</p> <p>19 the question that was asked of the witness on page 65,</p> <p>10:56:20 20 line 21.</p> <p>21 "Question:"</p> <p>22 -- and this was to Dr. Hopkins from Mr. Maimon.</p> <p>23 "And you see Mr. Hicks at the end of the first</p> <p>24 paragraph that he writes on June 4, 2015, states, 'Even</p> <p>10:56:31 25 one confirmed report of asbestos form would prompt</p>	<p>1 the end, "It also goes to pattern and practice that</p> <p>2 they continuously did not warn about the dangerous</p> <p>3 nature of the products."</p> <p>4 Finally, there was questioning on 1/24/19 with</p> <p>10:57:58 5 Dr. Egilman. This was Mr. Satterley, and he talked</p> <p>6 about -- Court's indulgence.</p> <p>7 This was the PowerPoint presentation he gave,</p> <p>8 Your Honor, and he showed a page. And this was,</p> <p>9 Ms. Clancy, around 162 to 165. And it was -- the</p> <p>10:58:23 10 exhibit is -- I believe it's DE1076. And then the</p> <p>11 question -- this is at page 162, lines 25.</p> <p>12 "Question: Is this" -- and this was -- the</p> <p>13 Court asked to lay some foundation.</p> <p>14 "Question: Is this -- is this important with</p> <p>10:58:41 15 regard to your warnings and anti-warnings opinions?</p> <p>16 "Question: --</p> <p>17 "Answer: -- excuse me.</p> <p>18 "Answer: Yes.</p> <p>19 And Ms. Zou actually objected, saying, "This</p> <p>10:58:51 20 PowerPoint" -- I think it's incorrectly reflected in</p> <p>21 the transcript. It's -- it says, "List the exposures</p> <p>22 at issue in this case." I think it was "postdates."</p> <p>23 And then the Court asked for further</p> <p>24 foundation.</p> <p>10:59:04 25 Mr. Satterley indicated he would do it. And</p>

Page 94	Page 96
<p>1 then he continued at line 19.</p> <p>2 "Question: Was this produced by Johnson &</p> <p>3 Johnson?</p> <p>4 "Answer: Yes. It's in the database.</p> <p>10:59:10 5 "Question: And this was a -- gotta get a date</p> <p>6 on it. On the last page, does it say Johnson & Johnson</p> <p>7 Consumer Companies 2014?</p> <p>8 "Answer: Yes.</p> <p>9 "Question: And is this a statement by</p> <p>10:59:22 10 Johnson & Johnson" -- continuing on to the next page --</p> <p>11 "regarding this very topic?</p> <p>12 "Answer: Yes.</p> <p>13 Ms. Zou again had objected at the end saying,</p> <p>14 "Your Honor, the citation -- the rest of the citation</p> <p>10:59:41 15 on this page are 2009 and beyond. The witness just</p> <p>16 established this is a 2014 PowerPoint, which has</p> <p>17 nothing to do whatsoever with the decision-making, the</p> <p>18 kind of fragrance at the time of use by Ms. Leavitt."</p> <p>19 And Mr. Satterley said, "That's not the purpose</p> <p>10:59:51 20 it's being offered for, Your Honor."</p> <p>21 So there are numerous instances in this</p> <p>22 transcript --</p> <p>23 THE COURT: Let me stop for a second. What was</p> <p>24 that exhibit? I don't have total recall.</p> <p>10:59:57 25 MR. RICHMAN: It was -- there was a -- I think</p>	<p>1 the product, and that's a separate issue from the</p> <p>2 punitive damages which have been at play.</p> <p>3 So I think just looking at all -- the door has</p> <p>4 been opened so many times, Your Honor, from the</p> <p>11:01:10 5 beginning of the trial throughout the trial, it's,</p> <p>6 frankly, fair examination by -- by co-counsel.</p> <p>7 MR. MAIMON: Your Honor, the purposes of this</p> <p>8 witness, we've already acceded that they should be able</p> <p>9 to cross-examine him about his results of testing,</p> <p>11:01:24 10 of --</p> <p>11 MR. SATTERLEY: With a limiting instruction.</p> <p>12 MR. MAIMON: -- Chinese talc. However the</p> <p>13 relevance -- what it's relevant to, as counsel had</p> <p>14 indicated in their argument, is the issue of punitive</p> <p>11:01:34 15 damages, whether or not they continue to sell a product</p> <p>16 that contains asbestos or not. That's the only issue</p> <p>17 that it could be relevant to. It cannot be relevant to</p> <p>18 the talc used by Mrs. Leavitt because she stopped in</p> <p>19 1998.</p> <p>20 So it can't be relevant to any issue of failure</p> <p>21 to warn the plaintiff. It can't be relevant to any</p> <p>22 question of the negligence and duty owed to the</p> <p>23 plaintiff. It can't be relevant to any issue of</p> <p>24 causation because it's not relevant -- it has</p> <p>11:02:00 25 nothing -- the Chinese talc was not used for any of her</p>
Page 95	Page 97
<p>1 it was probably a 113-page PowerPoint presentation, and</p> <p>2 Mr. Satterley was showing, I believe it was just</p> <p>3 page 46, which was a one-page excerpt of a PowerPoint</p> <p>4 presentation he showed to Mr. Hopkins.</p> <p>11:00:10 5 THE COURT: What was that actually? What was</p> <p>6 the context of that?</p> <p>7 MR. SATTERLEY: The context was with regards to</p> <p>8 fragrances and the smell -- smell being an</p> <p>9 anti-warning. It had nothing at all to do with whether</p> <p>11:00:22 10 there was asbestos in the talc. Just -- not argument</p> <p>11 at the time, it was an admission of a party opponent.</p> <p>12 That's their statement about the value of a smell and</p> <p>13 what that means to the product. So we didn't -- that</p> <p>14 was completely different.</p> <p>11:00:37 15 But whenever counsel is finished, I...</p> <p>16 THE COURT: Let counsel finish.</p> <p>17 Go ahead.</p> <p>18 MR. RICHMAN: Thank you.</p> <p>19 And to some extent, Mr. Satterley is correct.</p> <p>11:00:45 20 It wasn't a context of, as he stated, warnings and</p> <p>21 anti-warnings, which was the witness's testimony.</p> <p>22 So, again, there have been numerous instances,</p> <p>23 both from opening statement through Dr. Egilman through</p> <p>24 Mr. Hopkins, all prompted by plaintiff's counsel about</p> <p>11:00:58 25 in the context of warnings and the ores being used and</p>	<p>1 exposure.</p> <p>2 So the only issue that it can be relevant to is</p> <p>3 the issue of punitive damages, pattern and practice,</p> <p>4 which is what we -- but we don't have to deal with that</p> <p>11:02:13 5 right now, and we can argue later on about what was</p> <p>6 said by whom and when, but we've already acceded to the</p> <p>7 testimony -- or the cross-examination of Dr. Longo</p> <p>8 concerning Chinese talc.</p> <p>9 But we think that there is an appropriate</p> <p>11:02:26 10 limiting instruction as to what issue this is relevant</p> <p>11 to.</p> <p>12 MR. SATTERLEY: I'm handing a copy of the</p> <p>13 written proposed instruction that I read into the</p> <p>14 record to defense counsel, and we met and conferred in</p> <p>11:02:39 15 the hallway 10, 15 minutes ago where I advised them of</p> <p>16 this proposed instruction and that we would withdraw</p> <p>17 our objection to the cross-examination on Chinese talc.</p> <p>18 THE COURT: Let me just say a couple things. I</p> <p>19 think defense counsel needs to review what you've got</p> <p>11:02:54 20 there. First of all, I agree the door is open, as</p> <p>21 plaintiffs have indicated. So some examination on</p> <p>22 Chinese talc is appropriate. I think it is important,</p> <p>23 though, so we don't get completely confused here, that</p> <p>24 at least the jury be advised that there's no allegation</p> <p>11:03:12 25 in this case that the Chinese talc was used with regard</p>

Page 98

Page 100

11:03:33 1 to Ms. Leavitt, that the Vermont talc use stopped as of
2 2003 or whatever the appropriate date is. So,
3 accordingly, the testimony about Chinese talc does not
4 relate to the claims that Mrs. Leavitt has brought
5 about her exposure.

11:03:46 6 Whether or not I use the term "pattern and
7 practice" or not, I'm not sure I necessarily want to
8 get that specific, because I think plaintiffs --
9 defendants, I think, have implicitly raised a concern,
10 which I think is not an invalid concern, that, even
11 though it might not relate to her exposure, the jury
12 might conclude it has something to do about whether
13 their warnings duty changed over time.

11:04:01 14 So I think if we clarify, this doesn't have to
15 do with her claims of exposure, it's not -- it's not
16 the talc that's used, that would be the appropriate
17 limiting instruction. And you can argue however you
18 want to argue.

11:04:16 19 MR. SATTERLEY: Just so there's no surprises,
20 when they cross-examine on Chinese talc, it opens the
21 door to all the positive tests and all the documents,
22 testing showing there's asbestos in Chinese talc.

11:04:31 23 THE COURT: All right. Whatever door is
24 opened, you can cross through it, and we'll get to that
25 place. So, with that advisory, why don't you all see

1 documents, so we'll be done in less than a half-hour,
2 Your Honor.

11:05:51 3 THE COURT: No more delaying issues.
4 Let's finish that direct. I don't know, in
5 terms of the Chinese issue, is that likely to be
6 something we need to raise before the next break,
7 whoever's doing the --

11:06:01 8 MR. ASHBY: No. I could --
9 THE COURT: So you could consider this --
10 MR. ASHBY: I could save it to the very end.
11 THE COURT: Why don't we do that so we don't
12 have to keep the jury waiting. All right?

13 All right. With that, are we ready to get
14 going?

15 MR. MAIMON: Yes, Your Honor.

16 THE COURT: Let's go.

17 (Whereupon, the jury having entered the
18 courtroom, the following proceedings were held:)

19 THE COURT: Ready to proceed?

11:08:10 20 MR. MAIMON: Thank you, Your Honor.

21 BY MR. MAIMON:

22 Q. So, Dr. Longo, I just wanted to talk about the
23 historical samples of Johnson's Baby Powder that were
24 sent to you that had been produced out of the
25 historical samples of Johnson & Johnson, and let's just

Page 99

Page 101

11:04:49 1 if you can craft a little bit more narrow statement
2 that I can give to the jury which basically says the
3 points that I had mentioned.

4 MR. RICHMAN: I think so, Your Honor. I think,
5 obviously, as I indicated, we just need to take time to
6 review their proposed stipulation and look at that in
7 the context with the previous testimony.

8 THE COURT: Let me ask, how much longer does
9 plaintiff counsel's direct going to take?

11:05:02 10 MR. DEJARDIN: While he's looking at that,
11 Your Honor, this impacts the 2010 FDA study.

12 THE COURT: Let's do one thing at a time,
13 because you're not -- it's not coming through with this
14 witness, is it? I'm happy to think about that, but
15 right now I want to get Dr. Longo dealt with.

16 Does it relate to Dr. Longo?

17 I understand we had that issue back then, but
18 he's not having testimony about that study, does he?

11:05:26 19 MR. DEJARDIN: I don't think he's going to have
20 anything to say about it.

21 THE COURT: All right. So I'm happy to give
22 some time for you to raise that argument and consider
23 it. But right now let's deal with getting Longo on and
24 off the stand.

11:05:41 25 MR. MAIMON: I've been able to separate my

1 break this down a bit.

2 You say the Korean talc --

3 A. Yes.

11:08:37 4 Q. Just remind us how many samples you looked at
5 and how many were positive.

6 A. For the Korean talcs, we received seven
7 historical samples and out of the seven, six were
8 positive for regulated asbestos.

11:08:54 9 Q. And out of -- out of the historical samples
10 produced by Johnson & Johnson from their facilities,
11 how many samples of Johnson's Baby Powder made with
12 Vermont talc did you analyze?

13 A. We analyzed 41 samples for this report.

11:09:18 14 Q. And does that include Mr. Poye's -- the samples
15 that Mr. Poye looked at?

16 A. Yes.

17 Q. And how many of those were positive?

18 A. About 61 percent.

19 Q. So how many out of 41?

11:09:31 20 A. Oh, there was 25 positives.

21 Q. Now, the -- does the fact that you didn't find
22 asbestos, didn't detect asbestos in some of these, does
23 that indicate there's no asbestos there?

24 A. No. Any analytical technique can only go to
25 your analytical sensitivity, so you can't say there's

26 (Pages 98 to 101)

Page 102	Page 104
<p>1 no asbestos there. You can't make any decision on it</p> <p>2 other than -- (reporter clarification). I didn't find</p> <p>3 any asbestos to our analytical sensitivity which would</p> <p>4 be the finding of one fiber or bundle.</p> <p>11:10:15 5 Q. Now, with regard to that, you told us that you</p> <p>6 found different concentrations of asbestos in the</p> <p>7 various bottles that were positive; correct?</p> <p>8 A. Yes.</p> <p>9 Q. And could you -- with the Court's permission,</p> <p>11:10:28 10 if you could go up to the easel and graph that out for</p> <p>11 us or give us a rough estimation of how that worked and</p> <p>12 what impact that tells you about what -- what your</p> <p>13 opinion is about those nondetects?</p> <p>14 A. Yes. I had a chart because memory is not my</p> <p>11:10:44 15 best aspect at times.</p> <p>16 I think I gave it to you.</p> <p>17 Q. I might have left it back at the office.</p> <p>18 A. Ah. Well, maybe after a break. Because I</p> <p>19 don't want to put something up then.</p> <p>11:11:03 20 Q. Okay. So just, could you tell us, based on</p> <p>21 your -- the concentrations that you found and the range</p> <p>22 of concentrations, do you have an opinion with</p> <p>23 reasonable scientific certainty as to whether or not</p> <p>24 some of the bottles that were nondetects have some</p> <p>11:11:19 25 amount of asbestos in them?</p>	<p>1 A. Yes. I took all the positive samples and</p> <p>2 charted concentration on container and drew where the</p> <p>3 concentrations go from our analytical sensitivity from</p> <p>4 lowest to highest.</p> <p>11:12:50 5 Q. And is the data in your report about the</p> <p>6 concentrations on all these bottles that you're</p> <p>7 referring to?</p> <p>8 A. Yes.</p> <p>9 MR. MAIMON: May he proceed, Your Honor?</p> <p>11:13:00 10 MR. ASHBY: It's still the same objection,</p> <p>11 Your Honor.</p> <p>12 Can we have a sidebar?</p> <p>13 THE COURT: I need to see counsel in chambers.</p> <p>14 (Whereupon, the Court and counsel, having</p> <p>15 convened in the Court's chambers out of the presence of</p> <p>16 the jury, the following proceedings were held:)</p> <p>17 THE COURT: All right. So the Kennemur, I</p> <p>18 presume the objection is the opinion wasn't stated?</p> <p>19 MR. ASHBY: Right. The opinion that the</p> <p>11:14:10 20 nondetects that he found can still have asbestos in</p> <p>21 them for whatever reasons he's about to say is nothing</p> <p>22 that was disclosed in the deposition, and I asked him</p> <p>23 if he had stated all his opinions at the deposition,</p> <p>24 and that certainly wasn't one of them.</p> <p>11:14:23 25 MR. MAIMON: So I think he testified explicitly</p>
Page 103	Page 105
<p>1 A. Yes. After doing this for two years, I think</p> <p>2 it's only the reason we don't detect asbestos in the</p> <p>3 ones that are nondetects is we haven't quite solved how</p> <p>4 to get to lower analytical sensitivities. Because -- I</p> <p>11:11:41 5 can draw just a rough graph of what it looks like?</p> <p>6 Q. Sure.</p> <p>7 MR. MAIMON: With the Court's permission?</p> <p>8 MR. DEJARDIN: Objection. Lacks foundation.</p> <p>9 Move to strike the answer.</p> <p>11:11:50 10 MR. ASHBY: Join. Speculation.</p> <p>11 THE COURT: I'm going to reserve ruling until I</p> <p>12 hear what the foundation is as to what his description</p> <p>13 is. So I'll defer a ruling.</p> <p>14 You may go up to the chart and show that.</p> <p>11:12:07 15 THE WITNESS: So if you look at -- we have a</p> <p>16 range of concentrations on the Vermont that go to our</p> <p>17 analytical sensitivity, one fiber up to approximately</p> <p>18 250,000 fibers or so per gram.</p> <p>19 And if you chart all the concentrations, it</p> <p>11:12:27 20 gives you a --</p> <p>21 MR. ASHBY: Your Honor, we're going to make a</p> <p>22 Kennemur objection as well.</p> <p>23 BY MR. MAIMON:</p> <p>24 Q. Is what you're putting here in the data in your</p> <p>11:12:37 25 report, Dr. Longo?</p>	<p>1 at his deposition that the nondetects does not mean</p> <p>2 that it's free of asbestos. All it means is that it is</p> <p>3 below the level of detection for the analytical</p> <p>4 methodology that's being used. He testified about</p> <p>11:14:38 5 that.</p> <p>6 THE COURT: But that's not the opinion we're</p> <p>7 talking about. The opinion he's talking about is that</p> <p>8 it, in fact, would have contained asbestos I presume --</p> <p>9 MR. ASHBY: He said he thinks it does.</p> <p>11:14:47 10 THE COURT: I presume he's going to do a chart</p> <p>11 and say, you can follow a line down and say that there</p> <p>12 might be -- that there's asbestos accordingly.</p> <p>13 MR. MAIMON: He's going to say that they're --</p> <p>14 that you can't tell on that level of detection, but,</p> <p>15 given the slope, some might -- will have some.</p> <p>16 THE COURT: That's the opinion that I think the</p> <p>17 question is, was that disclosed.</p> <p>18 MR. SATTERLEY: It's their burden to</p> <p>19 demonstrate, I believe, that they've closed it out and</p> <p>11:15:10 20 they didn't ask the question, and if he -- counsel can</p> <p>21 demonstrate that, I think -- I obviously believe that</p> <p>22 Dr. Longo gave opinions about nondetect, and if they</p> <p>23 asked a specific question that closed it out other</p> <p>24 than, is there any other opinions, we want to see</p> <p>11:15:30 25 those, because it's their burden on a Kennemur</p>

27 (Pages 102 to 105)

Page 106	Page 108
<p>1 objection to demonstrate to the Court that they've</p> <p>2 properly done that.</p> <p>3 MR. ASHBY: All right. So I depose him for</p> <p>4 two days and then there was a third additional day.</p> <p>11:15:41 5 But at the end of the second day, which was the final</p> <p>6 day of the opinions having to do with this type of</p> <p>7 issue, I had closed him out.</p> <p>8 It's on November 27th, page 462. I can read it</p> <p>9 if the Court would like or I can get the transcript for</p> <p>11:15:59 10 everyone.</p> <p>11 But I did the typical closeout question:</p> <p>12 "Let me ask you this because this will -- for</p> <p>13 the opinions that you're going to give in the Teresa</p> <p>14 Leavitt case -- we've been doing this for two days</p> <p>11:16:09 15 now -- are there any opinions that you can think of off</p> <p>16 the top of your head that we have not covered that are</p> <p>17 not in any of these reports that we have marked and</p> <p>18 attached to the record?"</p> <p>19 And he says: "None that I can think of."</p> <p>11:16:21 20 MR. SATTERLEY: And all this information is in</p> <p>21 the report. All the data is in the report, all the --</p> <p>22 THE COURT: Does the report state the opinion,</p> <p>23 though? That's the question. Not the data. The</p> <p>24 opinion that the nondetects would contain asbestos.</p> <p>11:16:32 25 That's the issue here.</p>	<p>1 MR. DEJARDIN: And that's also the basis for</p> <p>2 the speculation and the foundation objections going --</p> <p>3 where he's got to go with this. And as plaintiff's</p> <p>4 counsel said, he's going to say that there might be</p> <p>11:17:49 5 asbestos. There is no foundation for that.</p> <p>6 THE COURT: We're not even there yet because --</p> <p>7 if I were to permit this, theoretically he's going to</p> <p>8 try to lay some foundation, but what I'm hearing, and</p> <p>9 in the absence of something that shows the other, is</p> <p>11:18:01 10 that this opinion that, in fact, below the detection</p> <p>11 limit there would have been asbestos was not disclosed</p> <p>12 in his report or in his depo, and there was a closeout</p> <p>13 question. That's what I'm hearing. That's the</p> <p>14 representation I've got.</p> <p>11:18:13 15 Unless there's something to the contrary, I'm</p> <p>16 not going to permit this testimony.</p> <p>17 MR. SATTERLEY: Well, Your Honor, we'll have</p> <p>18 to -- I'll have to get the deposition.</p> <p>19 Do you --</p> <p>11:18:19 20 MR. MAIMON: I have the deposition, Your Honor.</p> <p>21 I'll have to take a look. But I'll --</p> <p>22 THE COURT: You need to move on. If you want</p> <p>23 to come back -- come back to me, I'm happy to look at</p> <p>24 it, but right now, what I've got in front of me, I'm</p> <p>11:18:32 25 not permitting it.</p>
Page 107	Page 109
<p>1 MR. MAIMON: I don't think so. Explicitly.</p> <p>2 But the data is there.</p> <p>3 THE COURT: That's not the question. He's able</p> <p>4 to -- I'll permit him to testify to the data. He</p> <p>11:16:43 5 also -- I will permit him to testify that a nondetect</p> <p>6 doesn't mean there's nothing there. The question is,</p> <p>7 is he allow -- did he disclose an opinion that, in</p> <p>8 fact, there would have been asbestos there based on</p> <p>9 charting --</p> <p>11:16:53 10 MR. SATTERLEY: I'm sure he did, because -- and</p> <p>11 specifically with regard to chrysotile, because this</p> <p>12 doesn't -- the heavy liquid separation doesn't</p> <p>13 separate -- it can't pull this chrysotile up. So he</p> <p>14 would have given the opinion that, even in nondetects,</p> <p>11:17:06 15 there's asbestos there. I can -- we can take our time</p> <p>16 to search for that. But he would have specifically</p> <p>17 talked about asbestos being present even under his</p> <p>18 testing methodology because it doesn't -- the</p> <p>19 chrysotile is still present.</p> <p>11:17:19 20 MR. ASHBY: I agree he has said that you can't</p> <p>21 rule it out because -- as you pointed out, because you</p> <p>22 can't know what's below the detection limit. He has</p> <p>23 never said, though, that, "I still think and now it's</p> <p>24 my new belief that there is asbestos in there."</p> <p>11:17:38 25 MR. MAIMON: I don't think it's a new belief.</p>	<p>1 MR. MAIMON: Okay. I mean, I am going to have</p> <p>2 him wrap it out and explain the types of asbestos that</p> <p>3 would not have been detected by the -- by the method.</p> <p>4 MR. SATTERLEY: The detection limit.</p> <p>11:18:41 5 THE COURT: Right. Well, I think that's -- I</p> <p>6 don't think that's the issue here.</p> <p>7 MR. MAIMON: And his review of the --</p> <p>8 THE COURT: The only question that I'm ruling</p> <p>9 on right now is I'm not going to let him offer an</p> <p>11:18:51 10 opinion that below the detection limit there</p> <p>11 nevertheless would have been asbestos based on whatever</p> <p>12 extrapolation he wants to offer. Because that was not</p> <p>13 disclosed.</p> <p>14 MR. MAIMON: Understood.</p> <p>15 And I'll check.</p> <p>16 MR. ASHBY: Do we need to move to strike --</p> <p>17 THE COURT: Let me look at the language. I</p> <p>18 will strike -- if he actually expressed the opinion,</p> <p>19 I'll strike it. I don't remember if he did or not.</p> <p>11:19:16 20 MR. SATTERLEY: I would request Your Honor</p> <p>21 reserve because I think it's unfair to -- because I</p> <p>22 think the deposition -- that it was covered by that.</p> <p>23 THE COURT: I'll strike -- I will give enough</p> <p>24 wiggle room that I'm striking -- I will say, based on</p> <p>11:19:33 25 the conversations I had with counsel, I'm striking this</p>

Page 110	Page 112
<p>1 testimony at this time subject to an offer of proof.</p> <p>2 MR. SATTERLEY: But I don't think he gave the</p> <p>3 opinions. I think he was about to.</p> <p>4 THE COURT: I'm going to go look. If he hasn't</p> <p>11:19:47 5 given the opinion, I'm not striking it. I'll look.</p> <p>6 MR. ASHBY: Look for the part where he says "I</p> <p>7 think."</p> <p>8 THE COURT: I'll look at what he says.</p> <p>9 (Whereupon, in chambers having concluded, the</p> <p>10 following proceedings were held in open court in the</p> <p>11 presence of the jury:)</p> <p>12 THE COURT: You may proceed, but you're not</p> <p>13 going to do this graph at this time.</p> <p>14 So go forward.</p> <p>11:22:05 15 BY MR. MAIMON:</p> <p>16 Q. So, Dr. Longo, could you explain to the members</p> <p>17 of the jury the level of detection that your</p> <p>18 methodology had?</p> <p>19 A. Right now, we've improved it to approximately</p> <p>11:22:19 20 4,000 asbestos fibers or bundles per gram of talc.</p> <p>21 Q. And is the method that you use, are there types</p> <p>22 of asbestos that this method, the heavy liquid</p> <p>23 separation method, will not -- are not -- is not good</p> <p>24 at detecting?</p> <p>11:22:35 25 A. Yes.</p>	<p>1 MR. ASHBY: Objection. Foundation again.</p> <p>2 THE COURT: Overruled.</p> <p>3 THE WITNESS: Yes.</p> <p>4 BY MR. MAIMON:</p> <p>11:23:39 5 Q. And is the same thing true with regard to</p> <p>6 Imerys documents that you've reviewed?</p> <p>7 A. Yes.</p> <p>8 Q. And to the extent that chrysotile was present,</p> <p>9 would the heavy liquid separation have caused it to be</p> <p>11:23:49 10 in the section that you analyzed?</p> <p>11 A. No. It will be up with the talc.</p> <p>12 Q. And with regard to anthophyllite, did you find</p> <p>13 anthophyllite in the samples that you analyzed?</p> <p>14 A. We did.</p> <p>11:23:58 15 Q. Was it a specific type of anthophyllite that</p> <p>16 allowed you to detect it by this method?</p> <p>17 A. It was the heavy density anthophyllite versus</p> <p>18 the lighter density anthophyllite.</p> <p>19 Q. To the extent that there was -- and what</p> <p>11:24:11 20 element or what -- what contributes to the density of</p> <p>21 that anthophyllite that sinks to the bottom?</p> <p>22 A. The ones that have iron -- atoms replace the</p> <p>23 magnesium atoms. Anthophyllite is a solid solution</p> <p>24 series, so you can have anthophyllite with no iron.</p> <p>11:24:33 25 And that has a density of 2.85. We very rarely see</p>
Page 111	Page 113
<p>1 Q. Could you explain that to the members of the</p> <p>2 jury?</p> <p>3 A. Chrysotile asbestos, of all the samples we've</p> <p>4 analyzed, we have not found chrysotile asbestos,</p> <p>11:22:44 5 because the heavy liquid density is 2.85 and the</p> <p>6 density of chrysotile is pretty close to talc, about</p> <p>7 2.6. So if there's any present, it's not going to be</p> <p>8 detected.</p> <p>9 Q. On our animation, what would have happened if</p> <p>11:23:02 10 there were any chrysotile present?</p> <p>11 A. It would have gone up with the talc.</p> <p>12 Q. And have you seen references to chrysotile</p> <p>13 asbestos in the internal documents of Johnson & Johnson</p> <p>14 and Imerys?</p> <p>11:23:11 15 A. I have.</p> <p>16 MR. ASHBY: Objection, Your Honor.</p> <p>17 MR. DEJARDIN: Compound.</p> <p>18 MR. ASHBY: Again, Kennemur as well.</p> <p>19 THE COURT: Let's first break it up. Let's</p> <p>11:23:22 20 take it one by one.</p> <p>21 BY MR. MAIMON:</p> <p>22 Q. Have you seen documents from Johnson & Johnson</p> <p>23 that were referenced in your reference materials that</p> <p>24 talk about chrysotile in the talc?</p> <p>11:23:31 25 A. Yes.</p>	<p>1 anthophyllite without any iron in the heavy liquid</p> <p>2 density. Occasionally -- I think we saw one once.</p> <p>3 Everything we see has iron in it, and that iron</p> <p>4 increases the density from about 2.5 all the way up to</p> <p>11:24:52 5 3.2, sort of a sliding scale. It all depends when they</p> <p>6 were formed billions and billions of years ago did you</p> <p>7 have any iron or in -- in the composite of whatever the</p> <p>8 molten rock was. So, yes, we do find anthophyllite,</p> <p>9 but we don't find all of it.</p> <p>11:25:11 10 Q. And with regard to anthophyllite, if there's</p> <p>11 anthophyllite without iron present, would your method</p> <p>12 detect it?</p> <p>13 A. Typically no.</p> <p>14 Q. Now, in addition -- now, you mentioned</p> <p>11:25:38 15 winchite-richterite, and I'm going to hand up what I've</p> <p>16 marked as E-0514.169, E-609, E-610, E-611, E-0514.172,</p> <p>17 and E-0615.</p> <p>18 MR. MAIMON: May I, Your Honor?</p> <p>19 THE COURT: Yes. (Whereupon, Plaintiff's</p> <p>20 Exhibit E0514.169 was marked for identification.)</p> <p>21 (Whereupon, Plaintiff's Exhibit E0609 was</p> <p>22 marked for identification.)</p> <p>23 (Whereupon, Plaintiff's Exhibit E0610 was</p> <p>24 marked for identification.)</p> <p>25 (Whereupon, Plaintiff's Exhibit E0611 was</p>

Page 114	Page 116
<p>1 marked for identification.)</p> <p>2 (Whereupon, Plaintiff's Exhibit E0514.172 was</p> <p>3 marked for identification.)</p> <p>4 (Whereupon, Plaintiff's Exhibit E0615 was</p> <p>11:26:19 5 marked for identification.)</p> <p>6 BY MR. MAIMON:</p> <p>7 Q. And do you recognize those as pictures of a</p> <p>8 bottle of Johnson & Johnson Baby Powder dated 1994 that</p> <p>9 you analyzed and found to contain tremolite and</p> <p>11:26:33 10 richterite?</p> <p>11 THE COURT: First of all, can you identify</p> <p>12 which exhibit you're referring to?</p> <p>13 MR. MAIMON: Sure.</p> <p>14 BY MR. MAIMON:</p> <p>11:26:46 15 Q. So first of all, E-0514.169, is that a picture</p> <p>16 of a bottle of Johnson's Baby Powder that you analyzed?</p> <p>17 A. It is.</p> <p>18 Q. And E-0609, is that another picture of the same</p> <p>19 bottle?</p> <p>11:26:58 20 A. It is.</p> <p>21 Q. And E-0610, that a picture of the back of the</p> <p>22 bottle?</p> <p>23 A. It is.</p> <p>24 Q. And E-0611, is that a close-up on the copyright</p> <p>11:27:11 25 date for Johnson & Johnson Consumer Products</p>	<p>1 received into evidence.)</p> <p>2 (Whereupon, Plaintiff's Exhibit E0514.169 was</p> <p>3 received into evidence.)</p> <p>4 (Whereupon, Plaintiff's Exhibit E0514.172 was</p> <p>11:27:54 5 received into evidence.)</p> <p>6 BY MR. MAIMON:</p> <p>7 Q. The final -- let's just put it this way:</p> <p>8 E-0514.172, what type of asbestos structure that?</p> <p>9 A. That's a tremolite asbestos structure.</p> <p>11:28:06 10 Q. And E-0615, what type of asbestos structure is</p> <p>11 that?</p> <p>12 A. That's richterite, which is another type of a</p> <p>13 tremolite asbestos structure.</p> <p>14 Q. Now, when you analyzed the asbestos structures</p> <p>11:28:23 15 that you found in these samples, did you measure what's</p> <p>16 called the "aspect ratio"?</p> <p>17 A. Yes.</p> <p>18 Q. And did you compare the aspect ratio of the</p> <p>19 asbestos that you found with any standards with regard</p> <p>11:28:37 20 to whether or not they met the standards for asbestos?</p> <p>21 A. I did.</p> <p>22 Q. Okay. And with the Court's permission, I have</p> <p>23 a blow-up that I've shared with counsel about the</p> <p>24 aspect ratios.</p> <p>11:28:55 25 THE COURT: Counsel, let's make sure --</p>
Page 115	Page 117
<p>1 Incorporated, of 1994 for the bottle?</p> <p>2 A. It is.</p> <p>3 Q. Did you analyze this bottle?</p> <p>4 A. We did.</p> <p>11:27:18 5 Q. And E-0514.172, is that an electron micrograph</p> <p>6 of an asbestos structure that you identified in that</p> <p>7 bottle?</p> <p>8 A. It is.</p> <p>9 Q. And E-0615, is that another electron micrograph</p> <p>11:27:38 10 of another asbestos structure that you identified in</p> <p>11 that bottle?</p> <p>12 A. It is.</p> <p>13 MR. MAIMON: Your Honor, we would offer these</p> <p>14 into evidence.</p> <p>11:27:45 15 THE COURT: Any objection?</p> <p>16 MR. ASHBY: No objection.</p> <p>17 THE COURT: I hear no objection.</p> <p>18 They are all admitted.</p> <p>19 (Whereupon, Plaintiff's Exhibit E609 was</p> <p>20 received into evidence.)</p> <p>21 (Whereupon, Plaintiff's Exhibit E0610 was</p> <p>22 received into evidence.)</p> <p>23 (Whereupon, Plaintiff's Exhibit E0611 was</p> <p>24 received into evidence.)</p> <p>25 (Whereupon, Plaintiff's Exhibit E0615 was</p>	<p>1 Do you have an objection?</p> <p>2 MR. ASHBY: I might when I see it.</p> <p>3 MR. MAIMON: If I can get it down, Your Honor,</p> <p>4 and show counsel.</p> <p>11:29:21 5 THE COURT: Yes. Down there in the corner.</p> <p>6 MR. MAIMON: Demonstrative, Your Honor?</p> <p>7 THE COURT: Objection?</p> <p>8 MR. DEJARDIN: I didn't see it, but that's</p> <p>9 fine. That's fine.</p> <p>11:29:53 10 THE COURT: Okay.</p> <p>11 BY MR. MAIMON:</p> <p>12 Q. Dr. Longo, did you prepare this chart as a</p> <p>13 demonstrative?</p> <p>14 A. I did.</p> <p>11:29:59 15 Q. And if I can put it up there and have the</p> <p>16 doctor explain?</p> <p>17 THE COURT: It would make it easier. Yes.</p> <p>18 BY MR. MAIMON:</p> <p>19 Q. Let me go back here.</p> <p>11:30:11 20 THE WITNESS: Your Honor, may I stand up?</p> <p>21 THE COURT: You may stand up.</p> <p>22 BY MR. MAIMON:</p> <p>23 Q. If you could use this and explain for us --</p> <p>24 A. Sometimes they say no.</p> <p>11:30:19 25 Q. -- what the significance of it is with regard</p>

Page 118	Page 120
<p>1 to your findings of asbestos in Johnson's Baby Powder?</p> <p>2 A. So what we wanted to do is look at the aspect</p> <p>3 ratio, length to width, of what we detected for</p> <p>4 tremolite asbestos in a number of samples. Then we</p> <p>11:30:42 5 wanted to compare it to the National Institutes of</p> <p>6 Standard and Technology for the 1876, I believe it is,</p> <p>7 standard of tremolite asbestos that every asbestos lab</p> <p>8 in the country has to have where they say on there,</p> <p>9 this is tremolite asbestos. We measured 200 of those</p> <p>11:31:01 10 asbestos fibers and bundles and got that aspect ratio.</p> <p>11 So if we look at the blue, this is the tremolite</p> <p>12 asbestos for the National Institutes of Standard and</p> <p>13 Technology that asbestos labs have to calibrate what</p> <p>14 they do against that standard. And that's the blue.</p> <p>11:31:20 15 So you can see that the average aspect ratio</p> <p>16 comes down to approximately 9 to 1. Some longer, some</p> <p>17 shorter.</p> <p>18 Then the red is the MAS, the J&J amphibole</p> <p>19 asbestos, 304 separate asbestos structures, some</p> <p>11:31:40 20 less -- some less than 5 to 1, some -- for everything</p> <p>21 we found.</p> <p>22 And you can see that our standard for what's in</p> <p>23 the 300 some -- and 4 asbestos structures are the same</p> <p>24 for the National Institutes of Standard. It's in the</p> <p>11:31:59 25 same peak for this 9 to 10 to 1 aspect ratio.</p>	<p>1 BY MR. MAIMON:</p> <p>2 Q. Doctor -- Dr. Longo, you're familiar with the</p> <p>3 1991 publication by Professor Alice Blount</p> <p>4 titled "Amphibole Content of Cosmetic and</p> <p>11:33:58 5 Pharmaceutical Talcs"; correct?</p> <p>6 A. Yes, sir. It's referenced in my reports. We</p> <p>7 used her method for polarized light microscopy</p> <p>8 analysis.</p> <p>9 Q. And I have a copy for the Court that is marked</p> <p>11:34:11 10 Plaintiff's Exhibit L-0307, and the jury has seen this</p> <p>11 part during Dr. Blount's testimony.</p> <p>12 May I publish, Your Honor, page 229, the chart?</p> <p>13 THE COURT: Hold on one second.</p> <p>14 What's the page number?</p> <p>11:34:39 15 MR. MAIMON: 229 in the upper right-hand</p> <p>16 corner.</p> <p>17 THE COURT: Any objection?</p> <p>18 MR. ASHBY: Object to the hearsay, Your Honor.</p> <p>19 THE COURT: Objection is overruled.</p> <p>11:34:59 20 As an expert, I will permit this as a</p> <p>21 foundation for his testimony.</p> <p>22 You may show it.</p> <p>23 MR. MAIMON: Thank you, Your Honor.</p> <p>24 BY MR. MAIMON:</p> <p>11:35:04 25 Q. You are familiar with this chart in</p>
Page 119	Page 121
<p>1 Let's see what other folks have said. Blount</p> <p>2 PLM, who said in her paper --</p> <p>3 MR. ASHBY: Your Honor, hearsay. Objection.</p> <p>4 THE COURT: It's overruled for purposes of</p> <p>11:32:15 5 expert testimony and the opinion stated.</p> <p>6 THE WITNESS: Thank you, Your Honor.</p> <p>7 She measured tremolite asbestos in one</p> <p>8 particular sample that was from Vermont and plotted her</p> <p>9 aspect ratio. And that would be the black.</p> <p>11:32:32 10 So we have got red, ours; National Institutes</p> <p>11 of Standard, blue; the Blount, black; and then one more</p> <p>12 from a geological paper that measured tremolite</p> <p>13 asbestos again that had been milled, which is important</p> <p>14 about aspect ratio, and compared it to asbestos and</p> <p>11:32:55 15 said this is asbestos, this is in the aspect ratio, and</p> <p>16 that's the Campbell work. And that's the green. They</p> <p>17 all line up. We have the same peak aspect ratio for</p> <p>18 what a published paper says is tremolite asbestos, what</p> <p>19 a paper written for the US Geological Research, what</p> <p>11:33:19 20 the National Institutes of Standard and Technology say,</p> <p>21 and they all match what we found in Johnson & Johnson's</p> <p>22 Baby Powder for this type of analysis.</p> <p>23 You have to -- in my opinion, I concluded it,</p> <p>24 that what we found was all regulated asbestos and is</p> <p>11:33:42 25 matching very well with independent research.</p>	<p>1 Dr. Blount's article; correct?</p> <p>2 A. Yes.</p> <p>3 Q. And the jury -- the jury has seen the</p> <p>4 article -- or has seen Dr. Blount's testimony, but she</p> <p>11:35:21 5 compared her Talc I to tremolite asbestos, and how does</p> <p>6 this chart compare and what -- how does it play into</p> <p>7 what you told the jury in your -- in your graph?</p> <p>8 A. Well, if you look, the dotted lined over there</p> <p>9 is the green line here. This is the Campbell data.</p> <p>11:35:43 10 The black line is the Blount. And the red line is the</p> <p>11 MAS. We actually have a higher peak ratio and a little</p> <p>12 bit larger aspect ratio when it's all plotted out than</p> <p>13 theirs. It matches. It's -- it matches what other</p> <p>14 researchers and Ph.D. geologists -- two Ph.D.</p> <p>11:36:05 15 geologists and the National Institutes of Standard and</p> <p>16 Technology says this is the aspect ratio for tremolite</p> <p>17 asbestos as compared to the other one.</p> <p>18 Q. And, with regard to this, again, did the</p> <p>19 asbestos that you testified to this jury about finding</p> <p>11:36:21 20 in Johnson & Johnson Baby Powder and confirming in</p> <p>21 Mr. Poye's samples of Shower to Shower, were they</p> <p>22 cleavage fragments?</p> <p>23 MR. ASHBY: Leading. Objection.</p> <p>24 THE COURT: Overruled.</p> <p>11:36:31 25 THE WITNESS: No. We don't -- I don't count</p>

31 (Pages 118 to 121)

Page 122	Page 124
<p>1 cleavage fragments in TEM. I looked at Lee Poye's data</p> <p>2 to verify. He did not count cleavage fragments. We</p> <p>3 counted regulated asbestos fibers that fit on this</p> <p>4 chart, and what we do we're a little bit more -- for</p> <p>11:36:48 5 the protocols, it's only 5 to 1 or greater. So we're</p> <p>6 not even reporting for the concentrations everything</p> <p>7 less than 5 to 1, even though these publications say,</p> <p>8 that's asbestos.</p> <p>9 BY MR. MAIMON:</p> <p>10 Q. And I'm going to hand you an article I just</p> <p>11 want to make sure.</p> <p>12 Are you familiar with this article?</p> <p>13 A. Yes, sir, I am.</p> <p>14 Q. And is this an article in a peer-reviewed</p> <p>11:37:15 15 publication?</p> <p>16 A. Yes, sir, it is.</p> <p>17 Q. And is this an article that you -- is a</p> <p>18 reliable authority with regard to the distinction</p> <p>19 between cleavage fragments and asbestiform fibers?</p> <p>11:37:30 20 A. Yes, sir.</p> <p>21 Q. And is this something that experts in your</p> <p>22 field reasonably rely upon in forming opinions about</p> <p>23 the distinction between asbestiform fibers and cleavage</p> <p>24 fragments?</p> <p>11:37:43 25 A. Yes.</p>	<p>1 Are you familiar with the methods used</p> <p>2 historically to test Johnson & Johnson talc?</p> <p>3 A. I am.</p> <p>4 Q. And are you familiar with the CTFA J4-1 Method?</p> <p>11:39:16 5 A. I am.</p> <p>6 Q. In your opinion, Dr. Longo, is the J4-1 Method</p> <p>7 a reliable test method to determine that a talc product</p> <p>8 contains no asbestos?</p> <p>9 A. No, it is not.</p> <p>10 Q. And why not?</p> <p>11 A. The primary reason is, one, the analytical</p> <p>12 sensitivity is very poor for x-ray diffraction for</p> <p>13 these types of samples in talc.</p> <p>14 Your state-of-the-art instrument today and if</p> <p>11:39:47 15 you get the -- have a really, really, really good prep</p> <p>16 person, meaning if you have talc plates and you have to</p> <p>17 put it under -- to make a pellet, you have to typically</p> <p>18 put it under anywhere from 20 to 30,000 psi to press a</p> <p>19 pellet. Talc plates tend to want to slip in different</p> <p>11:40:11 20 directions, and if you get these different directions</p> <p>21 going and you don't have it right, it even reduces the</p> <p>22 analytical sensitivity further.</p> <p>23 For tremolite, your best state of the art and a</p> <p>24 very good prep person you can probably get .1 percent,</p> <p>11:40:26 25 but really the detection limit is typically 2 to 3.3,</p>
Page 123	Page 125
<p>1 Q. Thank you.</p> <p>2 THE COURT: Counsel, do you want to...</p> <p>3 MR. SATTERLEY: Identify the --</p> <p>4 THE COURT: Identify the document.</p> <p>11:37:53 5 MR. MAIMON: I appreciate it.</p> <p>6 BY MR. MAIMON:</p> <p>7 Q. If you read the title of the article, the</p> <p>8 publication, the date, and the offers.</p> <p>9 A. The title of the title is "Analytical</p> <p>10 Transmission Electron Microscopy of Amosite Fibers from</p> <p>11 South Africa."</p> <p>12 BY MR. MAIMON:</p> <p>13 Q. Amosite what?</p> <p>14 A. "Amosite Asbestos from South Africa."</p> <p>11:38:12 15 Thank you.</p> <p>16 The authors are Mark Germane and John F.</p> <p>17 Puffer. It is published in archives in the</p> <p>18 Environmental and Occupational Health. This is a --</p> <p>19 just looking for the date of publication.</p> <p>11:38:33 20 Q. Look in the lower left-hand corner of the first</p> <p>21 page of the article.</p> <p>22 A. I was getting there. It's 2019. This is</p> <p>23 literally new research in a new publication.</p> <p>24 Q. Now, I'd like to move on to our second subject,</p> <p>11:39:01 25 which was Johnson & Johnson testing.</p>	<p>1 maybe as high as .4 percent.</p> <p>2 Anthophyllite is much higher.</p> <p>3 And chrysotile you very rarely ever see in talc</p> <p>4 because of the similarity in chemical structure -- the</p> <p>11:40:45 5 chemical elements even though the structures are</p> <p>6 different.</p> <p>7 The second thing is, it cannot tell you if it's</p> <p>8 fibrous or not. It just tells you it's present. It is</p> <p>9 not a method that should be used ever for cosmetic talc</p> <p>10 if you really want to understand if it's present or</p> <p>11 not.</p> <p>12 Q. Are you familiar with the TM7024 method, the</p> <p>13 Johnson & Johnson specification method for transmission</p> <p>14 electron microscopy analysis of talc for asbestos?</p> <p>11:41:19 15 A. I am familiar with it.</p> <p>16 Q. And do you have an opinion with reasonable</p> <p>17 scientific certainty as to whether that is a reliable</p> <p>18 testing method for the detection of asbestos?</p> <p>19 A. Well, the tool is a very reliable testing</p> <p>11:41:32 20 method. They're using an analytical transmission</p> <p>21 electron microscope. It's what we use.</p> <p>22 The preparation, sample preparation, is the</p> <p>23 problem, in how much of the -- in how many grid squares</p> <p>24 they're going to analyze is the problem. Analyzing</p> <p>11:41:53 25 it -- preparing the sample according to their protocol</p>

Page 126	Page 128
<p>1 and analyzing it according to their protocol -- no</p> <p>2 heavy liquid density, 10 grid openings -- their</p> <p>3 analytical sensitivity is approximately to find one</p> <p>4 fiber, their analytical sensitivity is approximately</p> <p>11:42:11 5 12 million fibers per gram. So there has to be at</p> <p>6 least 12 million in there for you to find one.</p> <p>7 Our analytical sensitivity is -- right now, and</p> <p>8 we keep working to try to get it lower and lower -- is</p> <p>9 4,000 fibers per gram. 12 -- of all the samples we've</p> <p>11:42:35 10 analyzed, an analytical sensitivity at 12 million</p> <p>11 fibers per gram, all our samples we would only have had</p> <p>12 one positive. Everything else, all those other many</p> <p>13 positives, would have been negative.</p> <p>14 I think it would a good screening tool for the</p> <p>11:42:52 15 Korean talc, because we did get two positives there,</p> <p>16 but for Italian and Vermont, no, you should not use</p> <p>17 that method at all in my opinion.</p> <p>18 Q. And with regard --</p> <p>19 A. For TEM. But I mean XRD.</p> <p>11:43:08 20 Q. And with regard to the method discussing how</p> <p>21 many fibers you have to find in order to have a</p> <p>22 quantifiable number, how does that play into the</p> <p>23 reliability of the method?</p> <p>24 A. So it makes it very hard to have what's called</p> <p>11:43:24 25 a "positive sample."</p>	<p>1 fiber.</p> <p>2 Then they have another rule. In order for it</p> <p>3 to be called quantifiable, if it's tremolite, you have</p> <p>4 to have 5. You can have 4 and they'll say it's</p> <p>11:45:18 5 nonquantifiable.</p> <p>6 And then you have to have -- and that's</p> <p>7 56,800,000 asbestos fibers per gram. Now, if you were</p> <p>8 to have 4 tremolite and 4 anthophyllite, they still</p> <p>9 call that unquantifiable. They'll say you have to have</p> <p>11:45:33 10 at least 5 of each type. So you would have to have 5</p> <p>11 tremolite and 5 anthophyllite before they would call it</p> <p>12 positive.</p> <p>13 If you take -- these, now you would have to --</p> <p>14 you could have 113,600,000 asbestos fibers before those</p> <p>11:45:50 15 tests would call it positive. And, you know, if you go</p> <p>16 to the worst-case scenario, you get 4 of each.</p> <p>17 You'd have a quarter of a billion asbestos</p> <p>18 fibers per gram and it would still be called</p> <p>19 nonquantifiable because you didn't get 5 of any one.</p> <p>11:46:08 20 That, to me, is not acceptable for this type of</p> <p>21 work.</p> <p>22 Q. And this is the Johnson & Johnson method,</p> <p>23 TM7024, for testing talc for asbestos?</p> <p>24 A. Yes.</p> <p>11:46:22 25 Q. This is not the method that you use?</p>
Page 127	Page 129
<p>1 Q. Did you prepare a chart to help explain this?</p> <p>2 A. Yes.</p> <p>3 MR. MAIMON: Your Honor, I've shown -- I've</p> <p>4 shown that -- sent it to counsel for the defense and,</p> <p>11:43:38 5 with the Court's permission, I'd like to have Dr. Longo</p> <p>6 explain this.</p> <p>7 BY MR. MAIMON:</p> <p>8 Q. Did you prepare this chart to help explain this</p> <p>9 issue, Dr. Longo?</p> <p>11:43:51 10 A. That's my chart blown up.</p> <p>11 MR. MAIMON: Request permission to publish,</p> <p>12 Your Honor.</p> <p>13 MR. ASHBY: No objection.</p> <p>14 THE COURT: All right. You may.</p> <p>11:44:04 15 BY MR. MAIMON:</p> <p>16 Q. And this one...</p> <p>17 And if you could stand up and help explain your</p> <p>18 opinions about the method based on this chart.</p> <p>19 A. So if we backtrack just a tad, when we analyze</p> <p>11:44:35 20 these samples, from time to time we will find one</p> <p>21 asbestos fiber in our analysis. We report it and let</p> <p>22 others -- I believe that's a significant and that's --</p> <p>23 because of what we're finding.</p> <p>24 In that method, to find one, you have to have</p> <p>11:44:56 25 14,200,000 fibers to statistically define that one</p>	<p>1 A. No. I would not use this method.</p> <p>2 And this doesn't include -- you got to use</p> <p>3 heavy liquid density and you have to report what you</p> <p>4 find, at least if you're going to make an argument,</p> <p>11:46:38 5 well, it doesn't really mean anything. In order for</p> <p>6 other scientists to take a look and see what you found,</p> <p>7 you have to report it and get the data that's missing</p> <p>8 in a lot of these things.</p> <p>9 Q. And have you seen records from Johnson &</p> <p>11:46:52 10 Johnson, McCrone and Cyprus, which shows that asbestos</p> <p>11 was present but reported it as nonquantifiable?</p> <p>12 MR. ASHBY: Foundation. Objection.</p> <p>13 THE COURT: Lay a foundation.</p> <p>14 Once he answers the question, it's subject to</p> <p>11:47:10 15 foundation. I'll reserve.</p> <p>16 MR. MAIMON: Sure.</p> <p>17 BY MR. MAIMON:</p> <p>18 Q. Did you discuss with the attorney for Johnson &</p> <p>19 Johnson at your deposition actual pictures of asbestos</p> <p>11:47:17 20 found by Cyprus where McCrone had issued a report that</p> <p>21 said no quantifiable asbestos?</p> <p>22 A. I did.</p> <p>23 Q. And, based on those reports, how reliable is</p> <p>24 any -- based on that evidence, how reliable, in your</p> <p>11:47:31 25 opinion, Dr. Longo is any report that says no</p>

Page 130	Page 132
<p>1 quantifiable amounts of asbestos are found?</p> <p>2 A. It's not reliable at all. You don't -- you</p> <p>3 can't go back and say, well, it's not quantifiable and</p> <p>4 there's nothing there with no data because</p> <p>11:47:45 5 nonquantifiable, each one of these numbers would be</p> <p>6 called nonquantifiable. 200 million, nonquantifiable.</p> <p>7 So you can't rely on that data. If they had provided</p> <p>8 the data, the count sheets, then we could make a</p> <p>9 decision if it was really quantifiable or not and what</p> <p>11:48:06 10 the concentrations were.</p> <p>11 Q. So if you simply have a summary document that</p> <p>12 asserts that asbestos was nondetected or is</p> <p>13 nonquantifiable without the backup, is that a reliable</p> <p>14 way to say there's no asbestos present?</p> <p>11:48:21 15 A. No.</p> <p>16 Q. I'd like to move on to Terry Leavitt, and I'm</p> <p>17 going to ask you the materials -- what are the</p> <p>18 materials that you reviewed concerning Ms. Leavitt?</p> <p>19 A. I reviewed her two volumes of deposition. I</p> <p>11:48:42 20 reviewed her mother's deposition. I reviewed the --</p> <p>21 all her -- I reviewed her -- her interrogatories -- I</p> <p>22 think it was interrogatories and looked at the housing</p> <p>23 and covered everything that I felt was necessary in</p> <p>24 order to render any opinions about what her potential</p> <p>11:49:07 25 exposure was to Johnson & Johnson and how much of her</p>	<p>1 conservative number so I'm not overestimating or not</p> <p>2 trying to say, give as much as I can.</p> <p>3 Q. Did you -- we had Dr. Abraham testify about his</p> <p>4 digestion.</p> <p>11:50:35 5 Did you review the stubs that were prepared of</p> <p>6 the digestion by Dr. Abraham?</p> <p>7 A. Yes. I received those and we put it into our</p> <p>8 new field emissions scanning electron microscope and</p> <p>9 evaluated them.</p> <p>11:50:51 10 Q. And we'll talk about that in a minute. But --</p> <p>11 so we can -- I'm going to...</p> <p>12 MR. MAIMON: May I approach, Your Honor?</p> <p>13 THE COURT: You may.</p> <p>14 MR. MAIMON: I'm going to hand up to you what</p> <p>11:51:30 15 I've marked E-0520.14, .16, .22, .25, .32 and Exhibits</p> <p>16 E-0620, E-0621, E-0622, and E-0623.</p> <p>17 (Whereupon, Plaintiff's Exhibit E-0520.14 was</p> <p>18 marked for identification.)</p> <p>19 (Whereupon, Plaintiff's Exhibit E-0520.16 was</p> <p>20 marked for identification.)</p> <p>21 (Whereupon, Plaintiff's Exhibit E-0520.22 was</p> <p>22 marked for identification.)</p> <p>23 (Whereupon, Plaintiff's Exhibit E-0520.25 was</p> <p>24 marked for identification.)</p> <p>25 (Whereupon, Plaintiff's Exhibit E-0520.32 was</p>
Page 131	Page 133
<p>1 exposure to Johnson & Johnson, based on the testimony</p> <p>2 of her and her mother.</p> <p>3 Q. Did you make that assessment from an industrial</p> <p>4 hygiene perspective drawing on your years of experience</p> <p>11:49:19 5 in doing asbestos assessments?</p> <p>6 A. I based it on that. I based it on our own</p> <p>7 studies of application and exposures. I based it on</p> <p>8 Johnson & Johnson's own studies where they measured how</p> <p>9 much talcum powder got on a person during different</p> <p>11:49:36 10 activities, from powdering a baby to getting out of the</p> <p>11 shower, and what the different aspects of different</p> <p>12 people and how much they use. I considered it all.</p> <p>13 And then I tried to make it very conservative on what</p> <p>14 her actual use and how much talcum powder she was</p> <p>11:49:53 15 exposed to.</p> <p>16 Q. Why, in your estimation, did you choose a</p> <p>17 conservative number?</p> <p>18 A. I think it's always better to choose a</p> <p>19 conservative number so you're not saying the worst case</p> <p>11:50:04 20 or the most.</p> <p>21 For example, if somebody says, well, I would</p> <p>22 change a baby's diaper 12 times a day, you know,</p> <p>23 infant. But we all know that -- we've had children --</p> <p>24 after two years, two and a half years, that starts</p> <p>11:50:20 25 tapering off. Thank god. So I will pick a very</p>	<p>1 marked for identification.)</p> <p>2 (Whereupon, Plaintiff's Exhibit E-0620 was</p> <p>3 marked for identification.)</p> <p>4 (Whereupon, Plaintiff's Exhibit E-0621 was</p> <p>5 marked for identification.)</p> <p>6 (Whereupon, Plaintiff's Exhibit E-0622 was</p> <p>7 marked for identification.)</p> <p>8 (Whereupon, Plaintiff's Exhibit E-0623 was</p> <p>9 marked for identification.)</p> <p>11:51:47 10 BY MR. MAIMON:</p> <p>11 Q. And I'll ask you, can you identify those as</p> <p>12 photographs and EDS spectra, where applicable, of the</p> <p>13 fibers that your laboratory located from Ms. Leavitt's</p> <p>14 tissue off of Dr. Abraham's stubs?</p> <p>11:52:05 15 A. This is all out of our report. These are our</p> <p>16 scanning electron micrograph. These are our EDS</p> <p>17 spectra. This is our labeling. This is ours.</p> <p>18 MR. MAIMON: Your Honor, we would offer those</p> <p>19 into evidence.</p> <p>11:52:20 20 MR. ASHBY: Object on foundation, Your Honor.</p> <p>21 THE COURT: Could I have some foundation of</p> <p>22 what he actually did?</p> <p>23 MR. MAIMON: Sure.</p> <p>24 BY MR. MAIMON:</p> <p>11:52:40 25 Q. The stubs from Dr. -- first of all, did you</p>

Page 134	Page 136
<p>1 also review Dr. Abraham's report concerning his 2 digestion? 3 A. Yes. So we did review his report. We received 4 a number of his samples. 11:52:56 5 Q. And those would have been the digested tissue 6 on what's called a "stub," an SEM stub; right? 7 A. An SEM stub. We received those samples on 8 October 22, 2018. We analyzed four of the six samples. 9 These would have been Samples JA18-101-AL, small A. 11:53:19 10 Same numbers, ALB, BLA, and BLB. 11 We put it into the scanning electron 12 microscope. I actually was there supervising and 13 looking at it, and we went through and analyzed areas 14 for minerals to determine what was on the SEM stub. 11:53:42 15 Q. And are these the actual photographs of the 16 structures that you identified in Ms. Leavitt's tissue? 17 A. Yes. If you go through our report, we have the 18 same structures that have been pointed out here, in the 19 same EDS patterns. 11:54:04 20 Q. So, for instance, 0520.14, is that an asbestos 21 structure that you identified in Ms. Leavitt's tissue? 22 A. Yes. That is page 14 of 42, and that would 23 match our 14 of 42. 24 MR. MAIMON: Your Honor, I offer this into 11:54:23 25 evidence.</p>	<p>1 Ms. Leavitt's tissue? 2 Page 16 of 42? 3 A. Yes, it is. 4 MR. MAIMON: Your Honor, we would offer this 11:55:51 5 into evidence. 6 MR. ASHBY: Foundation, Your Honor. 7 THE COURT: Admit that also. 8 (Whereupon, Plaintiff's Exhibit E-0520.16 was 9 received into evidence.) 11:55:57 10 MR. MAIMON: Thank you. 11 May I publish? 12 THE COURT: You may. 13 BY MR. MAIMON: 14 Q. And you have two pictures here. 11:56:00 15 Could you just explain to the members of the 16 jury the difference between the two? 17 A. The top one is where we did an x-ray map and 18 did the analysis. So the scanning electron microscope 19 was in a different mode for the -- not so much on 11:56:18 20 imaging but more on doing x-ray mapping and doing EDS 21 so we could get the chemistry. Now, the bottom one is 22 the exact same structure, but now we're doing what's 23 known as a low voltage, high resolution. And you can 24 see some of the same particles, top and bottom, and 11:56:36 25 then that long slender sliver there is a talc fibrous</p>
Page 135	Page 137
<p>1 THE COURT: You mean this particular 2 Table 520.14? 3 MR. MAIMON: Yes. 4 THE COURT: Admit. 5 (Whereupon, Plaintiff's Exhibit E-0520.14 was 6 received into evidence.) 7 MR. MAIMON: Thank you. 8 BY MR. MAIMON: 9 Q. Can you tell the members of the jury what you 11:54:36 10 identified in Ms. Leavitt's tissue in this exhibit? 11 A. I was on the page. 12 That's a scanning electron micrograph. That 13 is, in our opinion, was chrysotile. Magnesium. We 14 have it going from bottom right-hand side up to the 11:55:02 15 top. That fiber is approximately 60 to 65 micrometers 16 long. And approximately -- that bundle, and 17 approximately a half a micron wide. So that's a 18 60 to 1, at least a 60 to 1 aspect ratio. 19 Q. Would chrysotile have come up in your analysis 11:55:21 20 of the Johnson & Johnson Baby Powder samples? 21 A. No. 22 Q. And is that because of the heavy liquid 23 separation effect that you told the jury about? 24 A. Yes, it is. 11:55:39 25 Q. Is .16 a talc fiber that you found in</p>	<p>1 material. 2 Q. Thank you. 3 The next exhibit, 0520.22, is that a tremolite 4 structure that you found in Ms. Leavitt's tissue? 11:56:59 5 Page 22 of 42. 6 A. Page 22 of 42. I've got all mine mixed up, so 7 it just easier to go right in my report. 8 Q. Sure. 9 A. Yes, sir, it is. 11:57:15 10 MR. MAIMON: Offer it into evidence, 11 Your Honor? 12 MR. ASHBY: Foundation. 13 THE COURT: Overruled. 14 It's admitted. 15 (Whereupon, Plaintiff's Exhibit E-0520.22 was 16 received into evidence.) 17 BY MR. MAIMON: 18 Q. .25. Page 25 of 42. Is that another tremolite 19 structure that you found in Ms. Leavitt's tissue? 11:57:34 20 A. It is. 21 MR. MAIMON: Offer 0520.25 into evidence 22 Your Honor. 23 MR. ASHBY: Objection. Foundation. 24 THE COURT: Overruled. 11:57:45 25 Admitted.</p>

35 (Pages 134 to 137)

Page 138		Page 140	
11:57:53	<p>1 (Whereupon, Plaintiff's Exhibit E-0520.25 was 2 received into evidence.) 3 BY MR. MAIMON: 4 Q. 0520.32, is that another tremolite image -- 5 structure that you found in Ms. Leavitt's tissue? 6 A. And the page number of that? 7 Q. 32. 8 MR. MAIMON: Offer it into evidence, 9 Your Honor? 10 MR. ASHBY: Same objection. 11 THE COURT: Same ruling. 12 Admitted. 13 (Whereupon, Plaintiff's Exhibit E-0520.32 was 14 received into evidence.) 15 MR. MAIMON: May I publish? 16 THE COURT: You may. 17 BY MR. MAIMON: 18 Q. Again, we have two pictures here. And can you 19 tell us what that is and what's the distinction between 20 the two pictures that we have? 21 A. Again, the upper -- upper one is what it will 22 typically look like when we do x-ray mapping. One of 23 the things that this automated -- this field emission 24 SEM will do is you can automate it. So we can set it 25 up to scan the sample on its own, and it is taking</p>	12:00:17	<p>1 up? 2 A. Yes. I just took the size of the average 3 fiber, calculated the volume of a cylinder, and then 4 filled it in. And that's about what it came to. 5 Q. Now, one of the photographs we saw was of a 6 talc fiber. 7 Do you recall that? 8 A. Yes, sir. 9 Q. And under the SEM, can you distinguish between 10 a talc fiber and an anthophyllite fiber? 11 A. You cannot. 12 Q. And could you take those stubs and put them in 13 one of your TEM microscopes? 14 A. We've never figured out how to do that. 15 I mean, the answer is no, you can't. Once it 16 gets on to a carbon stub, what you would have to do is 17 destroy the sample and see if you could get it back 18 into a solution and refilter it onto a TEM grid. But 19 there would be no way to say, that's the one I saw. 20 Now, you can do the opposite. You can take a 21 TEM grid and put it into the SEM and look at it, that 22 particular area, and then go back into the TEM. But 23 you can't do the reverse. 24 Q. And then, just briefly, Exhibits 0620, 0621, 25 0622, and 0623, are those structures that you found in</p>
Page 139		Page 141	
11:58:50	<p>1 3 million x-ray counts per minute. It's a very 2 sensitive new quad. And I can get into the whole nerd 3 stuff, but it'd bore you. So we can set it up to scan 4 it, and then you can go back and you say, tell us where 5 all -- anything you found with silicon and calcium. 6 Calcium is the primary indicator for tremolite. And 7 this is -- this is one of the most unusual bundles of 8 tremolite I've ever seen. When I say "bundle," because 9 it's -- you can almost see the barrel of it. 10 Now, if you were just measuring that by TEM, 11 you would say, hmm, pretty close to only 5 to 1. But 12 looking at that, it meets every definition of 13 asbestiform bundle. You can see the fibers. You can 14 see the fibers that are -- that could be peeled off. 15 You can see at the top it's got the little splayed ends 16 people like to talk about right up there? 17 Higher, higher. There we go. 18 And that particular bundle, I would estimate, 19 has somewhere in the order of a hundred to two 20 hundred -- I mean, a thousand to two thousand 21 individual bundles in it. And I've not seen one quite 22 like that where it's short but very wide. It has all 23 those individual tremolite fibers in it. 24 Q. So this bundle would have a thousand to 25 two thousand individual tremolite fibers that make it</p>	12:01:36	<p>1 Ms. Leavitt's tissue from Dr. Abraham's stubs? 2 A. Yes. 3 MR. DEJARDIN: Objection. Cumulative as to 21. 4 I think that's the same picture of another one he's 5 talked about. 6 MR. MAIMON: No problem. 7 MR. SATTERLEY: We won't introduce the same 8 picture twice, Your Honor. 9 THE COURT: 21. We're not referring to that? 10 BY MR. MAIMON: 11 Q. So 20 -- 62 -- 0620, 0622, and 0623 are all 12 those structures that you found in Ms. Leavitt's 13 tissue? 14 A. Yes. These were all done in my lab. 15 MR. MAIMON: We offer them into evidence, 16 Your Honor. 17 MR. ASHBY: Foundation, Your Honor. 18 THE COURT: Same ruling. 19 20, 22, 23 are admitted. 20 (Whereupon, Plaintiff's Exhibit E-0620 was 21 received into evidence.) 22 (Whereupon, Plaintiff's Exhibit E-0622 was 23 received into evidence.) 24 (Whereupon, Plaintiff's Exhibit E-0623 was 25 received into evidence.)</p>

<p style="text-align: right;">Page 142</p> <p>1 BY MR. MAIMON:</p> <p>2 Q. Now, can you tell the members of the jury based</p> <p>3 on your review of the materials, Dr. Longo, of the</p> <p>4 estimates that you made for the amount of baby powder</p> <p>12:02:13 5 that Ms. Leavitt used or was used on her over her</p> <p>6 lifetime?</p> <p>7 A. Yes, sir.</p> <p>8 Q. Please do.</p> <p>9 A. Reading her mother's deposition, which you've</p> <p>12:02:25 10 talked about, the early years, infant until about six</p> <p>11 or seven, on what was -- what was the hygiene activity</p> <p>12 with Johnson's Baby Powder. And then -- on</p> <p>13 Mrs. Leavitt. And I went through and said --</p> <p>14 Let me just get it so it will make it easier.</p> <p>12:02:47 15 If we start off with the '66 to '68, the diapering.</p> <p>16 And that's while she was still in -- still in the</p> <p>17 Philippines.</p> <p>18 So her mother said that typically she would</p> <p>19 change diapers in the beginning 12 times. That's</p> <p>12:03:08 20 because of the heat there. She would routinely. When</p> <p>21 she changed the diaper --</p> <p>22 MR. ASHBY: Your Honor, I'm just going to have</p> <p>23 to object. I think we need a sidebar on this.</p> <p>24 THE WITNESS: Oh, I'm sorry.</p> <p>12:03:19 25 MR. MAIMON: This is the basis of his opinion,</p>	<p style="text-align: right;">Page 144</p> <p>1 THE COURT: Ready whenever are.</p> <p>2 MR. RICHMAN: Thank you.</p> <p>3 So there's -- Judge, there's two issues we</p> <p>4 anticipate we wanted to take up outside the presence of</p> <p>12:06:02 5 the jury.</p> <p>6 Your Honor, what we anticipate happening with</p> <p>7 Dr. Longo is somewhat similar, which we think was</p> <p>8 started to be previewed with Dr. Egilman, was the</p> <p>9 experts are now giving this sort of blunderbuss opinion</p> <p>12:06:15 10 that I have read the testimony of Susan Leavitt, and</p> <p>11 Sue, just to give the Court a little context, Susan</p> <p>12 Leavitt is the only fact witness who testifies about</p> <p>13 the diapering aspect for any of the -- the baby, I</p> <p>14 guess the '66 to '68 testimony.</p> <p>12:06:33 15 So there's two issues, Your Honor.</p> <p>16 One, there's obviously a hearsay objection, and</p> <p>17 while there are -- there are different levels of</p> <p>18 hearsay. There is some hearsay that experts can rely</p> <p>19 on. It's a little different when an expert is trying</p> <p>12:06:45 20 to backdoor the specific statements of a fact witness</p> <p>21 who has not been called to testify.</p> <p>22 And citing, Your Honor, first of all,</p> <p>23 People v. Sanchez talks about this recently in the</p> <p>24 63 Cal.4th 665, and it dealt with the same issue of an</p> <p>12:07:04 25 expert just regurgitating fact witness testimony. And</p>
<p style="text-align: right;">Page 143</p> <p>1 Your Honor.</p> <p>2 THE COURT: Is there an objection about --</p> <p>3 about the hearsay aspect of the deposition?</p> <p>4 MR. ASHBY: It's foundation for what he's</p> <p>12:03:30 5 saying.</p> <p>6 MR. MAIMON: Let me -- let me try and rephrase,</p> <p>7 Your Honor, if I could.</p> <p>8 MR. ASHBY: I don't think it'll be -- it can be</p> <p>9 cured, though, is the point.</p> <p>12:03:39 10 A brief sidebar might help.</p> <p>11 THE COURT: All right. A sidebar.</p> <p>12 MR. MAIMON: Your Honor, perhaps this is a good</p> <p>13 time for a break for the jury.</p> <p>14 THE COURT: Take a break here. Might as well.</p> <p>12:04:04 15 And we'll come back and do the last.</p> <p>16 (Whereupon, the jury having exited the</p> <p>17 courtroom, the following proceedings were held:)</p> <p>18 THE COURT: Dr. Longo, if you want to step out.</p> <p>19 Appreciate that.</p> <p>12:05:00 20 THE WITNESS: I'm on my way out.</p> <p>21 THE COURT: Good. Thank you.</p> <p>22 Mr. Ashby?</p> <p>23 MR. RICHMAN: I'll be addressing this issue,</p> <p>24 Your Honor.</p> <p>12:05:21 25 Just trying to get my stuff.</p>	<p style="text-align: right;">Page 145</p> <p>1 what they say is, and I quote. This is 686: "What an</p> <p>2 expert cannot do is relate as true case-specific facts</p> <p>3 asserted in hearsay statements unless they are</p> <p>4 independently proven by competent evidence or are</p> <p>12:07:20 5 covered by a hearsay exception."</p> <p>6 THE COURT: Let me stop you there for one</p> <p>7 second.</p> <p>8 Is Ms. Leavitt's testimony being admitted in</p> <p>9 this case?</p> <p>12:07:26 10 MR. SATTERLEY: Yes, Your Honor.</p> <p>11 She would have come two weeks ago but for other</p> <p>12 witnesses that extended longer than expected. So.</p> <p>13 MR. MAIMON: We anticipated having her</p> <p>14 testimony already in place by the time Dr. Longo came,</p> <p>12:07:39 15 but schedulingwise, he's here and she hasn't come yet.</p> <p>16 So we think it's perfectly appropriate, subject to</p> <p>17 connection, for him to give testimony.</p> <p>18 MR. RICHMAN: So there's two issues,</p> <p>19 Your Honor.</p> <p>20 That is issue one and obviously --</p> <p>21 MR. SATTERLEY: I'm sorry. I apologize.</p> <p>22 And Sanchez, the Sanchez case he's talking</p> <p>23 about -- talking about testimony that's not going to</p> <p>24 occur. And she -- she is going to be here.</p> <p>12:08:00 25 MR. RICHMAN: So there's two issues,</p>

<p style="text-align: right;">Page 146</p> <p>1 Your Honor. That's one. We haven't heard from her. 2 So if she does end up coming, that alleviates some of 3 the issue. 4 That does not alleviate one continuing issue 12:08:10 5 that it sounds like Dr. Egilman -- excuse me -- that 6 Dr... 7 MR. SATTERLEY: Longo. 8 MR. RICHMAN: Thank you. 9 -- Dr. Longo was beginning to give and that 12:08:16 10 Dr. Egilman was starting to tread on. 11 What appears is there is this overall testimony 12 that, from the day of birth until 1968, she was exposed 13 to Korean talc and that there is absolutely no factual 14 foundation to support that opinion. 12:08:31 15 As Mr. Brown had to point out with Dr. Egilman, 16 the testimony of Ms. Susan Leavitt -- and this is -- 17 I'm citing page 21 of her deposition. 18 "Question:" This is line 15. "Do you know 19 where the Johnson's Baby Powder that you purchased at 12:08:46 20 Sangley Point came from? 21 "Answer: It came from the United States." 22 She says on page 19, "Now, where did you 23 purchase the baby powder that you used on Terry when 24 she was a baby in the Philippines. 12:08:58 25 "Answer: When my husband was in the military</p>	<p style="text-align: right;">Page 148</p> <p>1 how long it was used. There would be -- there's no 2 evidence of that and it's total hearsay. 3 So -- and there's no way for us to unring the 4 bell with Dr. Longo when he's just going to say, oh, 12:10:24 5 that's what the testimony is, when there is no factual 6 foundation to support that, even if she does testify. 7 And that's the issue. 8 MR. SATTERLEY: Your Honor, Mr. Richman and 9 Mr. Brown have been admitted here pro hac vice. And I 12:10:39 10 would expect that they would follow the rules and the 11 law of California and be candid with the Court and not 12 make misrepresentations. 13 What Mr. Brown did yesterday, which is going to 14 come out later, is lie to the jury with Dr. Egilman. 12:10:53 15 And what Mr. Richman just did is not be candid 16 with Your Honor regarding the testimony, because on the 17 very -- a few pages later, Ms. Leavitt is directly 18 asked where they purchased the Johnson's Baby Powder, 19 and she said, at the local grocery stores where we go 12:11:12 20 shopping. 21 So, for the -- for counsel to tell Your Honor 22 that the only place that she purchased was at a local 23 PX -- 24 MR. RICHMAN: I never said that. 25 MR. SATTERLEY: Wait a second now.</p>
<p style="text-align: right;">Page 147</p> <p>1 we purchased it at the commissary or the PX." 2 And then she says: "And where was the 3 commissary or PX. 4 "Answer: It was in Sangley Point Naval 12:09:10 5 Station." 6 So the -- issue one is the undisputed testimony 7 from the witness is the products she purchased on base 8 was sourced from the United States. There is nothing 9 to dispute that in the record. 12:09:20 10 More importantly, Your Honor, the other 11 undisputed testimony is that on -- sometime in 12 September of 1967, Terry Leavitt's mother, Susan, and 13 her husband -- I believe his name was David -- moved to 14 the United States. They left behind Terry with Terry's 12:09:43 15 grandmother and a house helper. 16 So -- and they stayed there for another seven 17 months before Terry and the grandmother joined them 18 back in the United States. 19 I believe Terry's grandmother has passed and 12:09:58 20 also the housekeeper. So there will be absolutely no 21 testimony about the products that were used on Terry 22 during the time she was still in the Philippines that 23 her parents had moved to the United States. 24 So it would be utter and complete speculation 12:10:12 25 as to what was used on her, the frequency it was used,</p>	<p style="text-align: right;">Page 149</p> <p>1 MR. RICHMAN: I object. That's a 2 misrepresentation. 3 THE COURT: One at a time. 4 MR. RICHMAN: I never said that's the only 12:11:26 5 place, Your Honor. The entire time period was the 6 representation of the witness. 7 THE COURT: Let's -- plaintiff is speaking now. 8 MR. SATTERLEY: So for counsel to suggest to 9 this jury and to Your Honor that -- number one, that 12:11:36 10 the Korean talc is not at issue because she purchased 11 it at a PX and that she knew the actual source of how 12 it came to when, in fact, on page 20 of her deposition, 13 when directly asked by counsel, she said, "We purchased 14 it at the grocery store where we go shopping." 12:11:53 15 So that -- number one, that's inaccurate 16 representation. 17 MR. RICHMAN: Your Honor, I'm sorry. I would 18 just ask counsel to read the question because it does 19 clarify. 12:12:03 20 MR. SATTERLEY: "You mentioned that you -- that 21 you'd get the Johnson's Baby Powder at the 22 commissary (sic) after he was discharged from the 23 military in late March 1967. Where did you purchase 24 Johnson's Baby Powder?" 12:12:14 25 MR. RICHMAN: After late March 1967.</p>

Page 150	Page 152
<p>1 MR. SATTERLEY: Counsel.</p> <p>2 THE COURT: Yeah, let's -- one at a time,</p> <p>3 please.</p> <p>4 MR. SATTERLEY: So my point is, Your Honor,</p> <p>12:12:22 5 Ms. Leavitt's going to be here to -- Susan Leavitt's</p> <p>6 going to be here to testify. She's going to testify</p> <p>7 that she purchased sometime at the PX, the Post</p> <p>8 Exchange, the military. Sometimes she purchased it at</p> <p>9 a grocery store. She's going to testify when they did</p> <p>12:12:37 10 and how they did it. All that's going to be -- she</p> <p>11 testified about it in her deposition. This expert --</p> <p>12 so there's no Sanchez issue at all. Sanchez related to</p> <p>13 the gang activities and the underlying facts that were</p> <p>14 never introduced and the testimony that was never</p> <p>12:12:49 15 introduced. Here, that -- the Sanchez case doesn't</p> <p>16 apply whatsoever. So she's going to testify about</p> <p>17 that.</p> <p>18 Everything he's raised is subject to</p> <p>19 cross-examination and the weight the jury may give to</p> <p>12:12:58 20 the testimony of -- of Ms. Leavitt's testimony.</p> <p>21 The -- certainly we can -- Your Honor is going</p> <p>22 to give an instruction that there's two ways to prove a</p> <p>23 fact: direct evidence and indirect evidence.</p> <p>24 And you -- I think Your Honor has already given</p> <p>12:13:14 25 preliminary instructions to that.</p>	<p>1 addressed by Mr. Satterley, is that, as of June of '67,</p> <p>2 Terry's mother and her husband moved to the</p> <p>3 United States. Since I have familiarized myself with</p> <p>4 the rules of California caselaw, a fact witness needs</p> <p>12:14:38 5 personal knowledge of the testimony -- or of events to</p> <p>6 give testimony about those. It is sheer and utter</p> <p>7 speculation as to what the babysitter may have been</p> <p>8 doing during the time that Terry is across the world</p> <p>9 from where her parents are. There's not going to be</p> <p>12:14:52 10 any evidence of -- from anyone with any personal</p> <p>11 knowledge as to what happened after September of 1967.</p> <p>12 The problem is, that Mr. Satterley seems to</p> <p>13 keep missing, is that these expert witnesses keep</p> <p>14 saying there's just this continuous use of the product</p> <p>12:15:06 15 from Korea from the date of her birth through 1968.</p> <p>16 And there's absolutely no factual basis to substantiate</p> <p>17 that. And that is our issue.</p> <p>18 THE COURT: I understand the arguments that</p> <p>19 have been made here. I haven't yet heard actually what</p> <p>12:15:20 20 he's going to say. And what he's going to say is</p> <p>21 what -- and I will instruct the jury -- that his</p> <p>22 statements about the depositions are not evidence and</p> <p>23 the jury will have to decide whether, in fact, when</p> <p>24 these people testify, it is. And there's an</p> <p>12:15:33 25 instruction I give at the end of the case in which the</p>
Page 151	Page 153
<p>1 And Ms. Leavitt's going to testify that her --</p> <p>2 I think it was her father and other family members did</p> <p>3 this activity on Terry also, and that it's her</p> <p>4 understanding and belief, because she instructed them</p> <p>12:13:30 5 to do so, that that -- that the powder was done when</p> <p>6 she wasn't there.</p> <p>7 So -- and the jury, Your Honor, may sustain</p> <p>8 objections when she comes, but to totally prevent an</p> <p>9 expert from giving opinions regarding this testimony</p> <p>12:13:43 10 is, I think, not well founded based upon the law in</p> <p>11 California.</p> <p>12 And Ms. Clancy says she's putting on</p> <p>13 Ms. Leavitt.</p> <p>14 I don't know.</p> <p>12:13:53 15 Do you have anything to add to that argument?</p> <p>16 MS. CLANCY: No. I agree with Mr. Satterley.</p> <p>17 MR. RICHMAN: So just in response, Your Honor,</p> <p>18 I have never stated there was not a small period of</p> <p>19 time that she may have claimed she bought a powder at a</p> <p>12:14:06 20 grocery store. What I stated to the Court was that,</p> <p>21 from the date of her birth and through March of 1967,</p> <p>22 the undisputed testimony was that she bought the</p> <p>23 product on base which came from the United States.</p> <p>24 There's no dispute about that fact.</p> <p>12:14:21 25 Moreover, which is also in dispute and was not</p>	<p>1 jury considers whether something has been established</p> <p>2 or not with regard -- that an expert relies on.</p> <p>3 So all of that's sort of a -- a later problem.</p> <p>4 The arguments that you raise right now are all</p> <p>12:15:48 5 appropriate matters for cross-examination. I'm not</p> <p>6 going to preclude him from expressing an opinion, and</p> <p>7 you can go at him going forward.</p> <p>8 I haven't heard actually what he's going to</p> <p>9 say, and I want to hear that. If he says something</p> <p>12:16:04 10 that you think he -- that there's no basis in the</p> <p>11 record to do it, I'll consider that. But what I am</p> <p>12 hearing is is he's going to tell based on what he</p> <p>13 understands from her deposition and he's going to draw</p> <p>14 some conclusions about it. And that may or may not be</p> <p>12:16:16 15 borne out by the evidence.</p> <p>16 So I'm not going to issue a ruling right now</p> <p>17 that precludes him from going there.</p> <p>18 MR. RICHMAN: And that's fine. I just -- to</p> <p>19 clarify the last point, I think -- or ask the Court to</p> <p>12:16:25 20 consider, because we're going to have to probably</p> <p>21 revisit this with this witness. It's not that she</p> <p>22 doesn't say it in her deposition, it's that she has no</p> <p>23 basis for saying it, and that now this witness cannot</p> <p>24 regurgitate something that she will not be able to say</p> <p>12:16:39 25 under any Rule of Evidence.</p>

Page 154	Page 156
<p>1 THE COURT: And that is -- that is why I am 2 going to instruct the jury that he's explaining what 3 the basis of his opinion is. His summary of the 4 deposition is not admissible testimony at all. The 12:16:50 5 jury is going to have to decide when that individual 6 testifies what is there and decide if that supports his 7 opinion. 8 MR. RICHMAN: Thank you, Your Honor. 9 THE COURT: Let's take a break while we can. 12:17:02 10 MR. ASHBY: I have one other issue. I hadn't 11 made a Kennemur objection. It had to do with documents 12 that Dr. Longo said he had reviewed for historical 13 testing regarding chrysotile. I had asked him at his 14 deposition about that. I had asked him to cite those 12:17:16 15 documents for me. He could not do that at the 16 deposition. He said he would withdraw his testimony if 17 he couldn't find those documents. He offered to 18 collect those documents for me and give them to me, 19 which he never did. That was the basis of my Kennemur 12:17:29 20 objection, is that I am now in a position where he's 21 testified about documents he's seen that show 22 historical testing of chrysotile, yet at his deposition 23 he was unable to disclose those documents to me, 24 offered, volunteered to collect those documents for me 12:17:46 25 to provide them but never did. Now I'm hearing it at</p>	<p>1 document to know whether or not it's relevant at all to 2 this case and the exposures in this case, because as 3 you know, there are -- there's Chinese talc, there's 4 Italian talc, there's Vermont talc, and there's Korean 12:19:27 5 talc. And for me to know whether or not these are 6 documents that are relevant to this case, that may have 7 been relevant to some other case certainly, or somebody 8 else may have asked him about it, it's only fair for me 9 to see those documents when he says to me that there 10 are documents that support this position. 11 And he cited -- he cited -- in his report he 12 cites there's 95 documents. So I asked him, of those 13 95 documents you're citing, which ones are the 14 chrysotile documents that support your opinion? And he 12:19:54 15 could not do it. He said he would collect those for 16 me, and he did not do it. 17 So I'm put in this very difficult position now. 18 It's not unlike when Dr. Hopkins was on the stand and 19 the objections constantly were, what's the document 12:20:07 20 that supports it? 21 THE COURT: Let me see the deposition testimony 22 you're referring to before you ask him. 23 MR. SATTERLEY: And the disclosure here, 24 Your Honor, where I incorporated Lanzo, Anderson, 12:20:18 25 Ingham.</p>
Page 155	Page 157
<p>1 trial and I'm incapable of cross-examining him on the 2 documents. 3 MR. MAIMON: I think if you look at the 4 deposition transcript, what Dr. Longo said is I have 12:17:58 5 been deposed countless times for Johnson & Johnson, 6 I've identified the documents before in prior 7 depositions by Johnson & Johnson, and by Mr. Ashby's 8 firm, of him and that he relies on the list of 9 documents that he has produced and these documents are 12:18:17 10 on the list. And he doesn't -- I don't believe he has 11 to sit there at a deposition and identify document by 12 document if it's been produced in anticipation of his 13 deposition, if it's -- if it's there, and if he's been 14 deposed upon it, countless times and gone through the 12:18:35 15 documents with Johnson & Johnson. 16 MR. SATTERLEY: I believe the disclosure of the 17 case incorporated by reference, his prior testimony 18 from the Lanzo case and from these other cases so that 19 we have more than adequate notice and these list of 12:18:50 20 reliance lists, he's been cross-examined ad nauseam. 21 MR. ASHBY: The problem, if anyone puts 22 themselves in my shoes, is when he's tells me he's seen 23 documents regarding chrysotile in products, and as I 24 explained at the deposition and Mr. Maimon and I got 12:19:07 25 into a disagreement about is, I need to see the</p>	<p>1 THE COURT: Before you go there, I want to hear 2 first what the testimony is. 3 Mr. Ashby. 4 You know what we're going to do? Go look for 12:20:31 5 it now. I want to take a break right now. Before we 6 call the jury back in, I'll look at this issue. 7 Let's go off the record. 8 (Recess taken.) 9 (Afternoon Session) 12:55:33 10 (Whereupon, the jury having entered the 11 courtroom, the following proceedings were held:) 12 THE COURT: Before we were on the break, there 13 was an objection to Dr. Longo who was referring to some 14 testimony of plaintiff's mother, who will be a witness 12:35:52 15 in this case. 16 I'm overruling the objection at this point, but 17 I want to instruct you that the expert is permitted to 18 tell you what assumptions he's making in reaching his 19 conclusions. 12:36:02 20 You will be asked at the end of the case to 21 decide whether those assumptions are supported by the 22 actual evidence. So his statement summarizing the 23 depositions are not evidence in this case. You hear 24 the actual testimony and decide if it supports the 12:36:18 25 opinion.</p>

Page 158	Page 160
<p>1 So, with that instruction, you may continue</p> <p>2 with your question.</p> <p>3 MR. MAIMON: Sure.</p> <p>4 BY MR. MAIMON:</p> <p>12:36:23 5 Q. Dr. Longo, again, let's talk about the time</p> <p>6 that Ms. Leavitt lived in the Philippines, 1966 to</p> <p>7 1968, and can you tell us, based on your review of the</p> <p>8 materials in this matter, the conservative estimate</p> <p>9 that you've come up with, with the amount of Johnson's</p> <p>12:36:44 10 Baby Powder that was used on her?</p> <p>11 A. During that two-year time frame, I made an</p> <p>12 estimate of 5,110 applications.</p> <p>13 Q. How much was that again?</p> <p>14 A. 5,110 applications for those two years in the</p> <p>12:37:02 15 Philippines.</p> <p>16 Q. And how did you come to that calculation?</p> <p>17 A. Her mother testified that for -- during that</p> <p>18 period, she would start off saying that she would</p> <p>19 change as much as 10 to 12 diaper changes a day. In</p> <p>12:37:21 20 addition to the high humidity in the Philippines, she</p> <p>21 would routinely -- the mother would routinely powder</p> <p>22 Teresa on and off just to try to reduce -- and give a</p> <p>23 bath. So. And over time, this two-year period of time</p> <p>24 the diapering became less, but the bathing continued</p> <p>12:37:48 25 and the powdering, especially in the summer months,</p>	<p>1 A. From the age of about two to seven, her mother</p> <p>2 would continue -- when she moved back -- when she moved</p> <p>3 to San Francisco in California and ultimately Fremont,</p> <p>4 her mother testified that she would still help and</p> <p>12:39:13 5 bathe her and put baby powder on her until she got to</p> <p>6 be about seven years old.</p> <p>7 At the age of 7, she started using the baby</p> <p>8 powder herself. And as she got older, she not only</p> <p>9 used it after showers, but she talked a lot about using</p> <p>12:39:28 10 it as a dry shampoo, which I've seen before, and also</p> <p>11 for setting foundation, putting it on the face.</p> <p>12 And she did that with the dry shampoo four or</p> <p>13 five times per week, starting in 7th grade at 12 years</p> <p>14 of age, and so on and so forth.</p> <p>12:39:48 15 So I just went through -- it's really simple</p> <p>16 math. If you can -- okay. Four to five times a week,</p> <p>17 then that gives you the ability to say -- you can</p> <p>18 calculate the number of times the dry shampoo,</p> <p>19 4.5 times a week equals 18 times a month. 18 times a</p> <p>12:40:04 20 month times 12 years, which she did that, 4,300</p> <p>21 applications, and so on and so forth.</p> <p>22 So I just worked through all the different</p> <p>23 applications and then take a conservative number.</p> <p>24 Q. What was the conservative estimate that you</p> <p>12:40:18 25 made for applications in the United States?</p>
Page 159	Page 161
<p>1 continued.</p> <p>2 So I thought -- so I believe, looking at that,</p> <p>3 a conservative estimate between the diapering, the</p> <p>4 powdering, and the bath would be seven times a day,</p> <p>12:38:02 5 that there would have been an application of Johnson's</p> <p>6 Baby Powder to Terry.</p> <p>7 Q. So, even though Terry Leavitt's mother said</p> <p>8 that she did diapering 10 to 12 times a day and then</p> <p>9 there was bathing on top of that and then there was</p> <p>12:38:18 10 powdering on top of that because of the humidity, the</p> <p>11 number that you used for her estimate was how many</p> <p>12 times a day?</p> <p>13 A. Seven.</p> <p>14 Q. Okay. And with regard to --</p> <p>12:38:29 15 A. And then it's 365 times, you know, a year</p> <p>16 because this happened every day. And then the two</p> <p>17 years.</p> <p>18 Q. And, with regard to the time that she used</p> <p>19 Johnson's Baby Powder when she lived in the</p> <p>12:38:43 20 United States, which would have been sourced from</p> <p>21 Vermont, did you make a calculation of the estimate of</p> <p>22 the number of applications of baby powder for that</p> <p>23 period of time?</p> <p>24 A. Yes.</p> <p>12:38:54 25 Q. Tell us what it was.</p>	<p>1 A. In the United States, the entire -- looking at</p> <p>2 total applications for the United States -- just give</p> <p>3 me a second because I had it broken out between...</p> <p>4 I had it all together. Took me one second.</p> <p>12:40:59 5 In the United States it was 11,700</p> <p>6 applications.</p> <p>7 Q. Now, have you taken into account estimates by</p> <p>8 Johnson & Johnson with regard to -- in making these</p> <p>9 calculations, estimates by Johnson & Johnson about</p> <p>12:41:29 10 average use of baby powder products?</p> <p>11 A. Yes.</p> <p>12 Q. And have you taken -- have you into account</p> <p>13 estimates by Johnson & Johnson of hypothetical exposure</p> <p>14 levels during such applications?</p> <p>12:41:42 15 A. Correct.</p> <p>16 Q. Have you taken into account NIOSH fiber per cc</p> <p>17 projections or estimate calculations with regard to</p> <p>18 Johnson's Baby Powder?</p> <p>19 A. I have.</p> <p>12:41:55 20 Q. Have you done analyses yourself, based on your</p> <p>21 samples, of exposure levels during the application of</p> <p>22 Johnson's Baby Powder?</p> <p>23 A. Yes. We have actually done hygiene studies</p> <p>24 where the Johnson's Baby Powder is applied and air</p> <p>12:42:14 25 samples are taken to measure what potential levels of</p>

Page 162	Page 164
<p>1 asbestos get into the breathing zone of the person 2 doing it. 3 Q. And with regard to that, have you compared the 4 results of your studies with published literature about 12:42:28 5 exposure levels upon using cosmetic talc with asbestos? 6 A. Yes, sir. There's a peer-reviewed publication 7 doing almost the exact same thing we did. 8 Q. And, based on your calculations and your -- 9 your own studies as well as your review of the 12:42:44 10 literature, can you tell us, with reasonable scientific 11 certainty, what you believe to be the range of exposure 12 levels for an application of Johnson's Baby Powder? 13 MR. DEJARDIN: Objection. Vague. Calls for -- 14 lack of foundation. Speculation. 12:42:58 15 MR. ASHBY: Overbroad as to "application," 16 given there's multiple. 17 THE COURT: Let's define what we mean by 18 "application." 19 MR. MAIMON: Sure. 12:43:04 20 BY MR. MAIMON: 21 Q. The types of applications that you've described 22 were discussed in the depositions that you reviewed, 23 can you tell us what types of -- or what range of 24 exposure levels you would expect based on your 12:43:18 25 experience, as well as the literature that you</p>	<p>1 Powder? 2 A. I do. 3 MR. ASHBY: Objection. 4 MR. DEJARDIN: Objection. Foundation -- 5 THE COURT: Hold on a second. 6 MR. DEJARDIN: Foundation. Speculation, 7 Your Honor. 8 MR. ASHBY: Subject to the motion in limine. 9 And I join. 12:45:03 10 THE COURT: Overruled. 11 You may answer. 12 THE WITNESS: It's my opinion that she was. 13 BY MR. MAIMON: 14 Q. And what do you base that upon? 12:45:10 15 MR. ASHBY: Same objections. 16 MR. DEJARDIN: Join. 17 THE COURT: And what he bases it on, I'll hear 18 what he says. I'm going to overrule the objection at 19 the moment. 12:45:18 20 THE WITNESS: I'm starting out on basing it on 21 all the testing that we've done verifying certain 22 amounts of regulated asbestos in the Johnson Baby 23 Powder product. The testing that we've done for the 24 products based on -- (reporter clarification) on the 12:45:38 25 Johnson Baby Powder products that were tested.</p>
Page 163	Page 165
<p>1 reviewed, as well as the Johnson & Johnson documents 2 that you reviewed for such applications? 3 A. Yes, I can. 4 THE WITNESS: I'm sorry. I was waiting for 12:43:31 5 your objection. Just trying to be polite. I 6 apologize. 7 THE COURT: No prompting the lawyer. 8 THE WITNESS: Your Honor, I didn't want to. 9 THE COURT: You may answer. 12:43:44 10 THE WITNESS: Yes. The range of exposures, 11 sometimes lower, sometimes higher, but based on 12 everything we've looked at, in my opinion, range from 13 approximately 0.1 regulated asbestos fibers per cc to 14 1.0 regulated asbestos fibers per cc. 12:44:11 15 BY MR. MAIMON: 16 Q. Now, based on your review of the documents, 17 based upon your Johnson & Johnson and Imerys, based 18 upon your own testing of the products that you have 19 talked to us about, as well as your validation of 12:44:27 20 Mr. Poye's results, based on the digestion results of 21 your review of Dr. Abraham's stubs that you told us 22 about, as well as the exposure estimates, based on all 23 of that, do you have an opinion, with reasonable 24 scientific certainty, as to whether Terry Leavitt was 12:44:47 25 significantly exposed to asbestos from Johnson's Baby</p>	<p>1 BY MR. MAIMON: 2 Q. There would be -- those would be both the Asian 3 samples and the Vermont samples that you talked about. 4 A. Correct. 5 Q. Correct? 6 Is it also based upon your review of Johnson & 7 Johnson documents? 8 A. Yes, sir. 9 Q. And is it also based upon your review of 12:45:54 10 digestion showing the types of asbestos and the types 11 of fibers in Ms. Leavitt's tissue? 12 A. Yes. 13 Q. Did you find -- is it also based on your 14 familiarity with the literature on the subject? 12:46:06 15 A. Yes. 16 Q. Okay. And did you find tremolite asbestos in 17 Ms. Leavitt's tissue? 18 A. Yes. 19 Q. Is that consistent with your testing of the 12:46:14 20 Johnson & Johnson products? 21 A. It is. 22 Q. Did you find talc, talc fibers, in her tissue? 23 A. Yes. Both talc fibers and talc plates. 24 Q. And is that consistent with your testing of the 12:46:27 25 products themselves?</p>

42 (Pages 162 to 165)

Page 166

1 A. Yes.
2 Q. And, to the extent that that talc was
3 anthophyllite you explained the inability of the SEM to
4 distinguish, is that also consistent with your testing
12:46:36 5 of the Johnson & Johnson products?
6 A. It would be.
7 Q. And you found chrysotile in the tissue as well;
8 correct?
9 A. Yes, sir.
12:46:45 10 Q. And is that consistent with your review of the
11 documents?
12 A. Yes, it is.
13 MR. ASHBY: Object. Move no strike,
14 Your Honor, based on what we talked about.
12:46:57 15 THE COURT: There is a motion to strike on the
16 documents. I'm going to reserve ruling on that subject
17 to our discussions.
18 BY MR. MAIMON:
19 Q. And is it also consistent with your review of
12:47:08 20 the Cyprus or Imerys documents, Dr. Longo?
21 A. It is.
22 Q. Now, based upon your review of the materials in
23 this case, is there any other documented or confirmed
24 significant asbestos exposure that Terry Leavitt has
12:47:23 25 had aside from her use of Johnson's Baby Powder for the

Page 167

1 use on her?
2 MR. DEJARDIN: Objection. Foundation. First
3 part. Or "after the side" -- or "aside."
4 THE COURT: Let me -- let me figure out. I'm
12:47:40 5 going to sustain the objections. First of all, I don't
6 know what foundation or what basis of where we're going
7 on this.
8 MR. MAIMON: Sure.
9 BY MR. MAIMON:
12:47:46 10 Q. You told us that you reviewed Ms. Leavitt's
11 deposition?
12 A. Yes.
13 Q. You reviewed her mother's deposition; correct?
14 A. Yes, sir.
12:47:50 15 Q. You reviewed answers to interrogatories talking
16 about where she lived and where she went to school?
17 A. Yes, sir.
18 Q. And based -- and did -- and based upon that,
19 have you been able to identify, based on your review of
12:48:01 20 the materials in this case, any other asbestos --
21 confirmed or documented significant asbestos exposure
22 aside from the Johnson's Baby Powder that you already
23 told us about?
24 A. No. I could not find any evidence of any
12:48:16 25 outside exposure other than the Johnson's Baby Powder.

Page 168

1 Q. Now, I have one final question for you,
2 Dr. Longo. And first of all --
3 Two questions.
4 A. It's a lie.
12:48:33 5 THE COURT: Never a trust a lawyer who says he
6 has one final question.
7 MR. SATTERLEY: On both sides.
8 THE COURT: You can pick a side.
9 BY MR. MAIMON:
12:48:43 10 Q. Is your methodology, when you talked about with
11 the sensitivity, is it capable of identifying
12 14 asbestos fibers per gram of talc?
13 A. No, sir. That's impossible, as we sit here
14 today.
12:48:58 15 Q. And is any methodology that you're familiar
16 with capable of identifying asbestos in talc at the
17 level of 14 fibers per gram?
18 A. No. We have probably the lowest sensitivity of
19 any of the labs that I know. We're right -- hovering
12:49:16 20 around 2500. We're talking almost two orders of
21 magnitude lower than that. I'm not aware of anything
22 that can do that.
23 Q. Of all the opinions that you've given us been
24 to a reasonable degree of scientific certainty?
12:49:30 25 A. Yes, sir.

Page 169

1 MR. MAIMON: Thank you.
2 Those are all the questions I have, Your Honor.
3 THE COURT: Cross-examination?
4 MR. ASHBY: Thank you, Your Honor.
5 Can I have a second to clear this out,
6 Your Honor?
7 CROSS-EXAMINATION BY MR. ASHBY:
8 Q. Good afternoon, Dr. Longo.
9 A. Good afternoon, sir.
12:51:09 10 Q. I have not seen you since your deposition. I
11 hope you've been well.
12 A. I'm trying to.
13 Q. You talked a little bit about industrial
14 hygiene earlier, and I think you said you attended some
12:51:24 15 seminars maybe on it and maybe you spoke at some of
16 them; is that what you said?
17 A. I've taught at industrial hygiene conferences
18 to certified industrial hygienists. I've published in
19 industrial hygiene journals. I have been -- I have
12:51:39 20 been asked to give talks on our research on industrial
21 hygiene, yes, sir.
22 Q. What you did say, though, is you're not a
23 certified industrial hygienist; correct?
24 A. No, sir, I'm still not.
12:51:50 25 Q. You've never taken the test to be a certified

43 (Pages 166 to 169)

Page 170		Page 172	
	1 industrial hygienist?		1 I can't talk about the Department of Defense stuff;
	2 A. No, sir, I haven't.		2 otherwise, I'm going to have to kill you.
	3 Q. You -- you're not a geologist, either; correct?		3 MR. ASHBY: I didn't catch that. What did he
	4 A. No. I don't have a degree in geology.		4 say?
12:52:00	5 Q. You're not a mineralogist as well?	12:54:06	5 MR. SATTERLEY: Don't repeat it. Don't repeat
	6 A. I don't have a degree in mineralogy. We have		6 it.
	7 to -- I have to do a lot of that in the arena of		7 THE WITNESS: Only since it's on the record.
	8 asbestos, but I don't have a degree in it.		8 THE COURT: The Court will note everyone is
	9 Q. I -- what my question was is are you a		9 laughing and we hope it was a joke.
12:52:14	10 mineralogist? Is that "yes" or "no"?	12:54:20	10 THE WITNESS: It was a joke.
	11 A. Well, it's a little difficult to answer		11 I think I'd get killed if I said that.
	12 questions like that "yes" or "no," so I would have to		12 BY MR. ASHBY:
	13 say "yes and no."		13 Q. None of that work, though, had anything to do
	14 Q. Do you have a Ph.D. in mineralogy?		14 with talcum powder; right?
12:52:24	15 A. That I do not have.	12:54:27	15 A. No. It wasn't talcum powder, but all this
	16 Q. The first time that you personally ever		16 research we've done over the years helps us understand
	17 analyzed what you know to be a Johnson & Johnson talcum		17 how to really analyze for microparticles and
	18 powder product was in 2017?		18 microfibers. So we're not just a -- we're just not a
	19 A. January of 2017, yes, sir.		19 testing lab. We have all these scientists that we can
12:52:40	20 Q. And you're aware, however, that the testing of	12:54:42	20 make progress on this. So we use things that we have
	21 cosmetic talc for the presence of asbestos has gone on		21 used for talcum powder. But, no. No government agency
	22 for decades; right?		22 has come to us and said, please test this talcum
	23 A. Yes, sir.		23 powder.
	24 Q. You, on the other hand, first started testing		24 Q. Dr. Longo, you've done this a few times. You
12:52:55	25 cosmetic talc only after being contacted by law firms	12:54:54	25 know how this works. We're going to try and get you
Page 171		Page 173	
	1 for the plaintiffs in asbestos litigation; right?		1 out of here as fast as you can.
	2 A. That is true.		2 I would appreciate it if you answer my
	3 Q. You never -- you've never tested cosmetic talc		3 questions.
	4 when you weren't being paid to do it by lawyers for the		4 MR. ASHBY: I'll ask the Court to either
12:53:10	5 plaintiffs?	12:55:04	5 admonish the witness or move to strike the testimony to
	6 A. That is true.		6 the extent it was more than a "yes" or "no."
	7 Q. The only time you've tested talcum powder is		7 THE COURT: I'm not going to strike that
	8 for plaintiffs lawyers suing for money in litigation;		8 answer, but I will -- let's try to keep your answers
	9 right?		9 succinct, sir.
12:53:20	10 A. I guess eventually that's what happens, yes,	12:55:15	10 THE WITNESS: Sorry, Your Honor.
	11 sir.		11 THE COURT: Go ahead.
	12 Q. You mentioned some work for some government		12 BY MR. ASHBY:
	13 agencies. I think you talked -- did you talk about --		13 Q. You never published any papers relating to
	14 did you mention NASA today?		14 talc; true?
12:53:35	15 A. I did not.	12:55:21	15 A. That's true.
	16 Q. No, you did not. Okay.		16 Q. None of the work you've talked about with the
	17 A. Did you want me to?		17 jury in this case has ever been submitted for peer
	18 Q. No. You don't have to. You usually say that		18 review; true?
	19 you can't talk about it; right?		19 A. That is correct.
12:53:42	20 MR. MAIMON: Objection, Your Honor.	12:55:29	20 Q. You're being compensated for your time here
	21 "Can't talk about."		21 today; true?
	22 THE WITNESS: No, I talk about NASA. That's		22 A. That is correct.
	23 the work we did on their space x-ray telescope where we		23 Q. And you've told me at your deposition in
	24 were doing microsurgery, actually drilling holes to		24 November that you've only ever talked about your data
12:53:54	25 help connect chips because of -- et cetera, et cetera.	12:55:40	25 with respect to cosmetic talc when MAS has been

Page 174	Page 176
<p>1 compensated for it; right?</p> <p>2 A. We've only ever talked about it?</p> <p>3 Q. You've only ever talked about it when MAS is</p> <p>4 being compensated for it.</p> <p>12:55:54 5 A. I've only testified at trial when -- when -- so</p> <p>6 my company can send a bill, yes, sir.</p> <p>7 Q. And you're the president of your lab, and it's</p> <p>8 called MAS; right?</p> <p>9 A. Yes, sir.</p> <p>12:56:09 10 Q. You own 75 percent of MAS; true?</p> <p>11 A. That is correct.</p> <p>12 Q. You opened MAS in February of 1988?</p> <p>13 A. Opened the doors, yes, sir.</p> <p>14 Q. And you had some discussions with Mr. Maimon</p> <p>12:56:21 15 about the \$30 million number.</p> <p>16 Do you recall that?</p> <p>17 A. I do.</p> <p>18 Q. And you said you hadn't -- that wasn't personal</p> <p>19 to you, you didn't make that 30 million personally is</p> <p>12:56:31 20 what you said; right?</p> <p>21 A. That is correct.</p> <p>22 Q. But what you've testified to in the past is</p> <p>23 that over the past 30 years MAS has billed over</p> <p>24 30 million for legal consultation, depositions, work</p> <p>12:56:42 25 evaluation, and trial testimony on behalf of</p>	<p>1 BY MR. ASHBY:</p> <p>2 Q. That's you on the right there; right?</p> <p>3 A. How did you guess?</p> <p>4 Q. George Yamate on the left there?</p> <p>12:58:23 5 A. Yes, sir.</p> <p>6 Q. You told us -- or you told me at your</p> <p>7 deposition in the past one of the ways you've explained</p> <p>8 this is that there was a price competition in the TEM</p> <p>9 community and you wanted to show that you had the best</p> <p>12:58:36 10 TEM lab at the time; is that right?</p> <p>11 A. That's correct.</p> <p>12 Q. But what you didn't do for showing that you're</p> <p>13 the best TEM lab in the country is you didn't -- you</p> <p>14 were not wearing a lab coat there; right?</p> <p>12:58:47 15 A. No. That would be a suit.</p> <p>16 Q. Are you wearing a lab coat?</p> <p>17 That's not a lab coat.</p> <p>18 A. That's not a lab coat.</p> <p>19 Q. Are you in a lab?</p> <p>12:58:57 20 A. No, sir, I'm not.</p> <p>21 Q. You're in a courtroom; right?</p> <p>22 A. Yes.</p> <p>23 Q. Another way you've explained it in the past is</p> <p>24 that you were trying to get the message across that MAS</p> <p>12:59:07 25 was a great lab for clearance samples and if there was</p>
Page 175	Page 177
<p>1 plaintiffs. Right?</p> <p>2 A. That is correct.</p> <p>3 Q. Not long after opening the doors at MAS, you</p> <p>4 were running an ad in which you were soliciting</p> <p>12:57:00 5 business; correct? Are you familiar with this ad?</p> <p>6 A. I've been shown it many times in the last</p> <p>7 30 years.</p> <p>8 Q. It's in the National Asbestos Council; right?</p> <p>9 In that magazine?</p> <p>12:57:13 10 A. Yes, sir. 1989. It's a classic.</p> <p>11 MR. ASHBY: May I approach, Your Honor?</p> <p>12 THE COURT: You may.</p> <p>13 BY MR. ASHBY:</p> <p>14 Q. I've handed you DX12204.</p> <p>12:57:39 15 Do you recognize that document?</p> <p>16 A. I do.</p> <p>17 Q. And is this the ad that you had published in</p> <p>18 the trade magazine for the National Asbestos Council?</p> <p>19 A. Yes, sir, it is.</p> <p>12:57:56 20 Q. All right.</p> <p>21 MR. ASHBY: Your Honor, can I publish?</p> <p>22 MR. MAIMON: No objection.</p> <p>23 THE COURT: You may publish.</p> <p>24 (Whereupon, Defendant's Exhibit DX12204 was</p> <p>12:58:12 25 marked for identification.)</p>	<p>1 ever a dispute, you'd be willing to stand up and defend</p> <p>2 your data in court; right? That's the other way you</p> <p>3 explained it; is that true?</p> <p>4 A. I think both those explanations go together.</p> <p>12:59:18 5 Q. I'm not suggesting they're not. I'm just</p> <p>6 asking if those are the two explanations.</p> <p>7 MR. MAIMON: Objection.</p> <p>8 BY MR. ASHBY:</p> <p>9 Q. So let me back up. The other way for -- or</p> <p>12:59:46 10 maybe the similar way you've explained this is that you</p> <p>11 were trying to get the message across that MAS was a</p> <p>12 great lab for clearance samples and if there was ever a</p> <p>13 dispute you'd be willing to stand up and defend your</p> <p>14 data in court; right?</p> <p>13:00:00 15 A. That's all part of the same reason why we did</p> <p>16 that.</p> <p>17 Q. Okay. But you've never actually testified in</p> <p>18 court to defend your clearance data; right?</p> <p>19 A. I have not. That's because we're so good.</p> <p>13:00:17 20 Q. Before you got heavy into consulting in</p> <p>21 cosmetic talc litigation, about 35 to 40 percent of</p> <p>22 MAS's business came from consulting?</p> <p>23 A. Yes, sir.</p> <p>24 Q. But in the past year, it has increased to about</p> <p>13:00:31 25 70 percent of your business; right?</p>

45 (Pages 174 to 177)

Page 178		Page 180	
	1 A. That is correct.		1 and they did something called "exfoliation" to it.
	2 Q. And that jump from 40 to 70 percent is due		2 Can you explain what "exfoliation" is?
	3 exclusively to the more work you have in talc		3 A. Sure. Vermiculite comes in plates, sort of
	4 litigation; right?		4 stacked up, thin mineral plates and has some water in
13:00:41	5 A. That is correct.	13:03:21	5 there. And if you take it through a furnace at about
	6 Q. You've testified as an expert in asbestos		6 1250 degrees Fahrenheit and rotate it through, it'll
	7 litigation since the 1980s; right?		7 expand that water and make it pop like popcorn so it's
	8 A. I think the first case was 1989 or 1990.		8 exfoliated.
	9 Q. Since you ran that ad that we still have up,		9 That gives it its insulation capabilities
13:01:03	10 30 years ago you've given about 2500 to 3,000	13:03:36	10 because it lets air get into the structure between the
	11 depositions; true?		11 leaves. So you can go from what looks like a pound of
	12 A. Since about 1989, 1990, when it started in		12 the rock and exfoliate that and it would be this big
	13 about 1991 and '92, that's true.		13 (indicating).
	14 Q. On average, now, you have testified at least		14 Q. And Scotts, because it had vermiculite in it,
13:01:18	15 once a week, every week for the last five years?	13:03:53	15 their product had some trace asbestos contamination;
	16 A. Yes. That is correct.		16 right?
	17 Q. Even more recently, you're having one to two		17 A. That's correct.
	18 depositions per week; right?		18 Q. And they hired you to defend them in court to
	19 A. Yes, sir.		19 say that the trace contamination in their product was
13:01:30	20 Q. And 95 percent of the time that you're in	13:04:06	20 extremely low and couldn't cause harm to a consumer;
	21 court, it's for plaintiffs attorneys in asbestos		21 right?
	22 litigation; true?		22 A. Yes and no. I never say any -- that any of
	23 A. That is true.		23 this causes harm to anybody. I'm just a measurement
	24 Q. In fact, you've been designated as an expert		24 guy.
13:01:42	25 several thousand times by plaintiffs lawyers suing in	13:04:16	25 And, yes, based on the application of that
Page 179		Page 181	
	1 litigation?		1 fertilizer, encapsulated, spread with a spreader in the
	2 A. With 3500 depositions, that math works.		2 trace amounts, I don't -- it was my opinion that there
	3 Q. You said recently that you think every		3 was no significant exposure, which is different than
	4 plaintiff's attorney in the country lists you in any		4 taking a powder that's loose and pouring it on your
13:01:58	5 type of asbestos litigation?	13:04:35	5 body every day. So there's -- you can't -- it's apples
	6 A. Sadly, that's true. They don't even call me.		6 and oranges, those two types of scenarios.
	7 They just list my name.		7 Q. So if you -- I gave you some binders there.
	8 Q. Okay. I'm going to -- you switched subjects		8 You took a look at them earlier when you first got in.
	9 now. You talked a little bit about -- or you talked		9 A. Which one do you want me to get?
13:02:17	10 with Mr. Maimon a little bit about the concentration	13:05:00	10 Q. It's Volume II.
	11 method and TEM, so we can talk about microscopes. You		11 MR. ASHBY: Can you see if Mr. Maimon has a
	12 can put that aside, the ads.		12 copy?
	13 Would you agree with me that in the 1970s, TEM		13 THE WITNESS: I don't see volumes.
	14 analysis was expensive, the TEM microscope itself?		14 MR. MAIMON: How about the tab number?
13:02:38	15 A. In 1970 dollars, I would agree.	13:05:13	15 MR. ASHBY: Why don't I take a look?
	16 Q. And you've stated there were very few, if any,		16 THE WITNESS: This one's much fatter than
	17 TEMs in commercial laboratories that had the		17 yours.
	18 appropriate technology to perform accurate trace		18 MR. ASHBY: We're starting skinny.
	19 amphibole contaminant analysis; right?		19 THE WITNESS: There's more down here. Oh, 202.
13:02:54	20 A. That's correct.	13:05:26	20 BY MR. ASHBY:
	21 Q. You've actually -- some of the work you've done		21 Q. Right. There you go.
	22 when you have worked for defendants you did some work		22 So if you could turn to just that first tab.
	23 for a company called Scotts; right?		23 It says "April 10, 2015 report"?
	24 A. Yes, sir.		24 Is that the report that you prepared for the
13:03:03	25 Q. And Scotts was a company that took vermiculite,	13:05:49	25 Scotts Company?

Page 182		Page 184	
13:06:01	<p>1 THE COURT: Are you looking at the exhibit book 2 or the transcript book? 3 MR. ASHBY: It's called -- it says "Longo Cross 4 Outline Exhibits, Volume II." 5 THE COURT: Okay. Which tab again? 6 MR. ASHBY: The first one. 7 THE COURT: All right. That's easy. 8 THE WITNESS: Yes, sir. This is one of them. 9 BY MR. ASHBY: 10 Q. Right. This is one of the -- this is a report 11 that you issued to the Court in some case that Scotts 12 was in? 13 A. I believe so. 14 Q. If you could turn to the -- page 6. Actually, 15 turn -- it's going to be marked -- it says "005" at the 16 bottom. 17 Do you see that? 18 A. I have 005. 19 MR. ASHBY: So it says DX11219.0005 for 20 everybody following along. 21 Your Honor, can I publish his report? 22 THE COURT: Any objection? 23 MR. MAIMON: No objection. 24 THE COURT: All right. You may publish. 25 (Whereupon, Defendant's Exhibit DX11219 was</p>	13:08:26	<p>1 Q. However, in the 1970s, there were no ATEM bulk 2 sample vermiculite/amphibole accepted and validated 3 protocols for this type of analysis." 4 Do you see that? 5 A. I do. 6 Q. And then -- then you say, "Another problem in 7 the 1970s was that there were very few, if any, ATEMs 8 in commercial laboratories that had the appropriate 9 technology to perform accurate trace amphibole 10 contaminant analysis." 11 That's what you said when you were working on 12 behalf of Scotts; right? 13 A. Yes, sir. I still stand by that statement. 14 Q. I'm not suggesting you don't. 15 So you -- you talked a little bit about -- you 16 can take that down now, John. 17 And you're familiar with the J4-1 Method. You 18 talked about that a little bit, too; right? 19 A. Yes. 20 Q. And you know that if you reviewed the J4-1 21 Method that the J4-1 Method on its face says one of the 22 reasons that TEM wasn't being used for J4-1 was that 23 there was -- it had to do with the expense of the 24 equipment eliminated -- eliminated it as a routine 25 method; right?</p>
Page 183		Page 185	
13:07:25	<p>1 marked for identification.) 2 MR. ASHBY: John, can you pull up page -- on my 3 copy, 0005. 4 BY MR. ASHBY: 5 Q. So it says -- you start -- you wrote this; 6 right? 7 A. Yes, sir. 8 Q. And what you wrote was, "One of the criticisms 9 leveled at Scotts of this early testing for both bulk 10 and air sample analysis was the use of PLM, XRD, and 11 PCM for the quantification of possible amphibole 12 contamination and exposure in light of these 13 instruments' detection limits and specificity for 14 amphibole asbestos." 15 Do you see that? 16 A. I do. 17 Q. And you said, "This would be a valid criticism 18 if these analyses were performed today because of the 19 validation and routine use of analytical transmission 20 electron microscopes for this type of vermiculite 21 amphibole contaminant analysis." 22 Do you see that? 23 A. Yes, sir. 24 Q. You still agree with that; right? 25 A. Yes, I do.</p>	13:09:37	<p>1 A. That's what it states. 2 Q. It's one of the reasons. There were a couple, 3 but that's one of the reasons. 4 A. That's what it states. 5 Q. And you know that J4-1 was the industry 6 standard in the United States in the 1970s, right, for 7 the analysis of cosmetic talc for the presence or 8 absence of asbestos; right? 9 A. Yes. I think it was a trade organization 10 standard. 11 Q. And you know that the UK Cosmetic Trade 12 Association, so the United Kingdom's Cosmetic Trade 13 Association, in the 1970s was called the British 14 Toiletry Preparation Federation; right? 15 A. That is correct. 16 Q. And the British Toiletry Prep -- Toiletry 17 Preparation Federation developed its own industry 18 standard for testing of talc; right? 19 A. I believe so. 20 Q. And the British -- and I'm going to call it 21 "TPF." The British TPF method was XRD; right? 22 A. I think so. I'd have to look at it to verify 23 that. 24 Q. Why don't you look at the binder there that I 25 have. It's Volume I. If you'd go to Tab K.</p>

47 (Pages 182 to 185)

Page 186		Page 188	
13:11:11	1 A. Volume I? 2 Q. Yeah. 3 MR. MAIMON: What tab? 4 MR. ASHBY: K. 5 THE COURT: Kilo. 6 MR. SATTERLEY: Zero not K. 7 MR. MAIMON: There's nothing in here. Maybe I 8 was -- I have nothing in here. 9 MR. ASHBY: You got the blank book? 13:11:24 10 BY MR. ASHBY: 11 Q. Do you have something in your K, Dr. Longo? 12 A. My K? I'll tell you in a second. 13 Yes. I have something in my K. 14 Q. Okay. Is this a -- all right. 13:11:44 15 So do you see it says, "The British Toilet 16 Preparations Federation is in the process" -- 17 MR. MAIMON: Your Honor, I object. This is not 18 in evidence. I don't -- at least I don't know that it 19 is in evidence. 13:11:56 20 THE COURT: Let's establish a basis before you 21 read the document. 22 MR. ASHBY: This is Plaintiff's 23 Exhibit LE-0971. 24 MR. SATTERLEY: Is it in evidence? 13:12:07 25 MR. ASHBY: I don't know. I don't think it is.	13:13:31	1 Q. "These will involve density concentration 2 technique followed by x-ray analysis." 3 Right? 4 A. Correct. 5 Q. And that's -- when it's talking about x-ray 6 analysis, it's talking about XRD; right? 7 A. Yes, but, more importantly, it's talking about 8 density concentration with XRD, which would greatly 9 increase the sensitivity of it. This would have been a 10 good method if it ever made it through. 13:13:49 11 Q. So let's unpack that a little bit. 12 So this is about concentration method with XRD; 13 right? 14 A. Yes. 13:14:01 15 Q. It's not about concentration method with PLM; 16 right? 17 A. No. That comes later. 18 Q. And it's not about concentration with TEM; 19 right? 13:14:11 20 A. Correct. 21 Q. So what's up for consideration here is 22 concentration with XRD; right? 23 A. Correct. What I was saying, it was never 24 accepted in the final method that I'm aware of. 13:14:21 25 Q. That wasn't my question.
Page 187		Page 189	
13:12:20	1 I'm going to lay a foundation right now. 2 BY MR. ASHBY: 3 Q. This is Plaintiff's Exhibit LE-0971. 4 It's dated June 4, 1973; correct? 5 A. That's what it states. 6 Q. And it's a letter from Shelley, S-h-e-l-l-e-y, 7 to Rolle, R-o-l-l-e; correct? 8 A. Correct. 9 Q. Is this a document that you considered before? 13:12:49 10 A. I believe I've seen it before. 11 MR. ASHBY: And this document has been admitted 12 into evidence. 13 MR. SATTERLEY: Then we have no objection. We 14 just wanted to know whether it's admitted. 13:12:59 15 MR. ASHBY: Wanted to make sure I knew what I 16 was doing... 17 John, can you -- 18 Can we publish, Your Honor? 19 THE COURT: Yes. 13:13:15 20 BY MR. ASHBY: 21 Q. So do you see it says, "The British Toilet 22 Preparations Federation is in the process of drafting 23 specifications on talc." 24 Do you see that? 13:13:23 25 A. Yes.	13:14:32	1 A. Oh, I'm sorry. 2 Q. And you've said in your report that the 3 advantage to using XRD is it can analyze very large 4 samples; right? You don't -- you don't dispute that? 5 A. No, sir. I stand by that. 6 Q. And you talked a little bit about PLM -- 7 MR. ASHBY: You can take that down. 8 BY MR. ASHBY: 9 Q. You talked a little bit about PLM. 13:14:41 10 You call PLM the "workhorse"; right? 11 A. Yes, sir. 12 Q. And one of the advantages of P -- to using PLM 13 is that it can positively identify the different 14 regulated asbestos mineral types; right? 13:14:59 15 A. That is correct. 16 Q. I mean, those are your words; right? 17 A. That's why I said it's correct. 18 It's only not my words I have to think about. 19 Q. Well, I -- and PLM can provide a qualitative 13:15:19 20 estimate of weight percent of asbestos; true? 21 A. That's true. 22 Q. And what you told us was that XRD and PLM 23 aren't sensitive enough to detect trace concentrations 24 of amphibole mineral if it's less than 0.01 percent by 13:15:47 25 weight; right?

Page 190	Page 192
<p>1 A. XRD, anything less than .1 now. It used to be 2 .3, .5. PLM -- Blount PLM may be able to get there. 3 We're -- we're somewhere below .1, .01. But the PLM 4 analysis being done today in our lab is not your 13:16:07 5 typical PLM analysis. 6 So PLM analysis should be used, ISO PLM, the 7 Blount PLM. But it has to be understood that the 8 analyst has to spend one to two hours on the sample. 9 It's sort of -- it's not any different methodology, but 13:16:28 10 the time, high resolution, aberration-corrected lenses, 11 digital cameras, you have to put the time in to make it 12 work. But it does work. 13 Q. What you wrote in your report of November 2018 14 is that, "TEM is the only analytical method with the 13:16:47 15 appropriate sensitivity for the analysis of trace 16 mineral concentrations that are less than 0.01 weight 17 percent range." 18 A. That's absolutely correct. Where the 19 modified -- where the PLM method -- 13:17:01 20 Q. I just asked you if you wrote that. That's all 21 I asked you, Dr. Longo. 22 A. Yes, I did write that. And I agree with it. 23 Q. And so, when we looked before at that -- 24 MR. ASHBY: John, can you throw it back up, 13:17:20 25 LE-0973?</p>	<p>1 and using concentration method to improve sensitivity 2 for PLM; right? 3 A. Yes. 4 Q. It wasn't TEM; right? 13:18:35 5 A. No. 6 Q. And are you aware that Dartmouth had also 7 looked at using concentration method? 8 A. Yes. 9 Q. And Dartmouth was looking at it for -- again, 13:18:48 10 for PLM and not TEM; right? 11 A. Well, it wasn't Dartmouth -- Dartmouth was 12 hired by Windsor -- I think it was Cyprus or Windsor -- 13 to look into that, see if they could do it. 14 Q. Okay. My question was, that related to PLM, 13:19:04 15 not TEM for the concentration method. 16 Do you understand my question? 17 A. I do. 18 Q. And Dartmouth was looking at -- was looking at 19 the concentration method for PLM; right? 13:19:15 20 A. Yes, sir. 21 Q. And there was some discussion -- you talked 22 about Dr. Blount. And Dr. Blount had a concentration 23 method as well; right? 24 A. She published it in 1989, 1990. Yes. That's 13:19:29 25 right.</p>
Page 191	Page 193
<p>1 BY MR. ASHBY: 2 Q. So when we looked at this before, this is 3 actually -- they're talking about here, if you see, "In 4 order to check this, please send samples of Vermont 13:17:29 5 talc from different batches directly to Fred Pooley." 6 Do you see that? 7 A. I do. 8 Q. So what they're talking about here is the idea 9 of using XRD to improve -- or using -- I'm sorry. I'll 13:17:44 10 strike that. 11 They're using concentration to improve the 12 sensitivity of XRD; right? 13 A. That's correct. 14 Q. And you're aware that there were other 13:17:55 15 organizations looking at the concentration technique to 16 improve the sensitivity of other analytical tools; 17 right? 18 A. Colorado School of Mines, a professor from... 19 Q. I just asked if you're aware. 13:18:12 20 A. Oh, I thought you asked me who they were. I'm 21 aware. 22 Q. And one of them was Colorado School of Mines; 23 right? 24 A. That's correct. 13:18:21 25 Q. And Colorado School of Mines was looking at PLM</p>	<p>1 Q. Right. So 1990 she began looking at it because 2 she was testing it as a way to make a more rapid and 3 equally accurate way of looking for amphibole in talcum 4 powder; right? Or in the talc ore really. 13:19:45 5 A. Well, she had been doing it for some years. 6 She published it in 1990 to make it more -- the 7 analysis more sensitive. 8 Q. And that, again, was having to do with PLM, not 9 TEM; right? 13:20:04 10 A. That's correct. 11 MR. ASHBY: John, could you -- 12 BY MR. ASHBY: 13 Q. So this was one -- you had this earlier. This 14 is going to be Tab M. This is L-0307. It's one of the 13:20:19 15 articles you and Mr. Maimon talked about. Mr. Maimon 16 actually put up the picture from this article of the 17 graph. 18 THE COURT: Is this article -- 19 MR. ASHBY: Yes. So it's the 1990 Dr. Blount 13:20:35 20 article, and it's Tab M. It also has an exhibit number 21 of L -- Plaintiff's Exhibit numbered L-0307. 22 Can I publish, Your Honor? 23 THE COURT: Yes. 24 MR. ASHBY: John, do you mind pulling up the 13:21:04 25 part. Next part. Where it says -- on the next</p>

Page 194	Page 196
<p>1 page where it says "because." There we go.</p> <p>2 BY MR. ASHBY:</p> <p>3 Q. So this is Dr. Blount in 1991 where she's</p> <p>4 publishing the results of her heavy density liquid</p> <p>13:21:30 5 separation -- we're also calling it "concentration</p> <p>6 method" -- via PLM; right?</p> <p>7 A. Yes.</p> <p>8 Q. And what she says is she's trying to find --</p> <p>9 she's developing -- "A more rapid and equally accurate</p> <p>13:21:44 10 method has been developed based on concentrating the</p> <p>11 amphibole particles by density difference." Right?</p> <p>12 That's what she wrote?</p> <p>13 A. Yes, sir, that's what it states.</p> <p>14 Q. And when she says "equally accurate method,"</p> <p>13:21:59 15 what she's referring to -- the other method she's</p> <p>16 referring to is what you call it the "long method" of</p> <p>17 looking at analytes or samples for amphibole minerals;</p> <p>18 right?</p> <p>19 A. That's correct.</p> <p>13:22:10 20 Q. And the long method is where you don't</p> <p>21 concentrate, you just have to go through -- it just</p> <p>22 takes a little longer to go through the sample that you</p> <p>23 have, right, because you have to look at many more</p> <p>24 fields of view; true?</p> <p>13:22:21 25 A. Sort of.</p>	<p>1 Q. And you -- and you know that Johnson & Johnson</p> <p>2 used the McCrone lab to do its TEM testing; right?</p> <p>3 A. That is correct.</p> <p>4 Q. You're familiar with the McCrone lab -- you've</p> <p>13:23:50 5 hired folks from the McCrone lab, haven't you?</p> <p>6 A. I have.</p> <p>7 Q. More than one. You hired Mike Mount and</p> <p>8 Richard Hatfield; right?</p> <p>9 A. Yes and no.</p> <p>13:23:59 10 Q. You didn't hire them?</p> <p>11 A. I hired Richard Hatfield, but he wasn't working</p> <p>12 at McCrone.</p> <p>13 Q. Well, he had worked at McCrone; right?</p> <p>14 A. He ran the Atlanta office.</p> <p>13:24:10 15 Q. Okay. You testified McCrone was literally the</p> <p>16 best lab in the country in the time frame of the 1970s</p> <p>17 and '80s; right?</p> <p>18 A. I've said that in the past.</p> <p>19 Q. Well, in fact, for when you did that work for</p> <p>13:24:24 20 Scotts and Scotts had that problem where they were in</p> <p>21 the litigation you were defending them, one of the labs</p> <p>22 they used was McCrone; right?</p> <p>23 A. It was.</p> <p>24 Q. And you had looked at McCrone's test results</p> <p>13:24:35 25 and you used those as a basis to say that Scotts had</p>
Page 195	Page 197
<p>1 Q. Tell me where I'm wrong.</p> <p>2 A. It's more than just looking at a little bit</p> <p>3 more. You have to spend the time because you have the</p> <p>4 talc covering a lot of the particulates. If you are</p> <p>13:22:33 5 going to get the same accuracy as the heavy density</p> <p>6 liquid method and you're not using that, you have to go</p> <p>7 through and look at a tremendous amount more material</p> <p>8 because it is more accurate if you count more</p> <p>9 structures at any particular time.</p> <p>13:22:49 10 So that's why I said "sort of." You're right,</p> <p>11 but it's not just looking at it a little bit more.</p> <p>12 Q. It's not just me. Dr. Blount says it's equally</p> <p>13 accurate; right?</p> <p>14 A. I'm not taking -- I'm not taking issue with</p> <p>13:23:03 15 that. Just the issue with -- you have to look at it a</p> <p>16 little bit more. It -- it's more than just that.</p> <p>17 Q. And you told us that TEM --</p> <p>18 MR. ASHBY: Thank you, John.</p> <p>19 BY MR. ASHBY:</p> <p>13:23:19 20 Q. TEM is more sensitive than PLM and XRD; right?</p> <p>21 A. Yes.</p> <p>22 Q. And you know that Johnson & Johnson used TEM to</p> <p>23 look for amphiboles and asbestos in talcum powder</p> <p>24 beginning in the 1970s; right?</p> <p>13:23:36 25 A. I do.</p>	<p>1 done the proper thing by using PLM and XRD to do their</p> <p>2 analysis; right?</p> <p>3 A. At that time I said that, that's -- that's what</p> <p>4 I believed.</p> <p>13:24:49 5 Q. So the J4-1 Method was XRD, and if there's a</p> <p>6 positive, then a PLM; correct?</p> <p>7 A. Correct. If there was a positive PLM; if it</p> <p>8 was a negative, they stopped.</p> <p>9 Q. Right. So that was the industry standard for</p> <p>13:25:13 10 cosmetic talc; true?</p> <p>11 A. I don't know how industry standard it was. And</p> <p>12 I'm not criticizing the use of XRD. It's just what --</p> <p>13 how you interpret today or in the past documents and</p> <p>14 what was really found or not found.</p> <p>13:25:31 15 Q. Understood.</p> <p>16 The use of TEM, we can agree, though, exceeds</p> <p>17 that standard if you're looking for asbestos in a talc</p> <p>18 sample?</p> <p>19 A. Exceeds the XRD standard?</p> <p>13:25:48 20 Q. Right.</p> <p>21 A. It's a better tool than the XRD. It's how you</p> <p>22 run the tool or how you prepare the sample makes all</p> <p>23 the difference. The tool is a good tool.</p> <p>24 Q. Right. And when you say it's how you prepare</p> <p>13:26:00 25 it, you're talking about that -- if you use the</p>

Page 198

1 concentration method or indirect preparation method or
2 direct preparation method, those sorts of things;
3 right?
4 A. Right. How much are you going to -- how much
13:26:10 5 are you going to look at? 10 grids versus 500 grids?
6 Are you -- what is your, quote, background that you're
7 going to use to, in my opinion, invalidate results? I
8 mean, it all depends on what you do.
9 Q. Well, you've testified in the past that if you
13:26:27 10 take representative samples and take enough different
11 samples, you get an idea of the distribution of
12 asbestos fibers, even in a ton of material.
13 You testified to that; right?
14 A. I have. That's not what I'm criticizing here,
13:26:44 15 though.
16 Q. And when we talk about a ton, I'm talking about
17 an actual ton, 2,000 pounds; right?
18 A. 2,000 pounds is one ton. We agree on that.
19 Q. Okay. Fair enough.
13:26:56 20 But my point is you've testified in the past
21 that you can take these little bitty samples from a ton
22 of talcum powder and if you take enough of those little
23 bitty samples, that's representative of the entire
24 2,000 pounds of material?
13:27:09 25 A. Yes. I think you're sort of misconstruing what

Page 199

1 I said. If you take enough samples. You know, if we
2 take the 10-ounce bottle and we take one sample, I
3 think that is pretty representative of that 10-ounce
4 bottle. If you're taking one sample of two tons, which
13:27:26 5 may be a million of those bottles, no, that is not
6 representative.
7 Q. Okay. How many is enough? If you take enough
8 composite samples, you get enough of a representation
9 of even a ton of material; right?
10 A. At some point, yes.
11 Q. You wouldn't criticize a company for using TEM
12 to look for amphiboles in talc simply because TEM only
13 analyzes a small amount of talc; right?
14 A. No. The tool and what you use is good. It's
13:27:59 15 the -- it's the best method for analyzing for talc.
16 But if you don't get the right analytical sensitivity
17 into the range of what you're going to see there, then,
18 no, it is not a good method to use.
19 Q. And you know Johnson & Johnson took hourly
13:28:16 20 samples of talc; right?
21 A. I guess, yes.
22 Q. Well, did you know that or not?
23 A. I guess I'd have to see the document that they
24 were taking hourly samples and analyzing for TEM.
13:28:33 25 Q. And they took these samples and they put them

Page 200

1 into composites.
2 You know -- you know what a composite is;
3 right?
4 A. Yes, sir.
13:28:39 5 Q. And we can agree that a composite --
6 MR. SATTERLEY: Can you show him the document?
7 MR. ASHBY: It's sitting there.
8 THE COURT: Let him ask the question.
9 MR. SATTERLEY: I apologize.
13:28:52 10 MR. ASHBY: I'm sorry.
11 BY MR. ASHBY:
12 Q. I'm sorry, Doctor.
13 A. That's fine.
14 Q. So Johnson & Johnson did this regime of TEM
13:29:07 15 testing both monthly and quarterly from the 1970s and
16 onward.
17 You've testified to that before; right?
18 A. I don't think I testified to that. Maybe
19 somebody showed me a document and I read it.
13:29:40 20 MR. ASHBY: Your Honor, do you want to --
21 THE COURT: I think we're at the bewitching
22 hour. Let's stop right here.
23 So we're going to stop here. Just to remind
24 you next Tuesday is a holiday. So have a great time.
13:29:56 25 I hope your work lets you off, too, but otherwise, have

Page 201

1 a great weekend. See you next week.
2 No -- no discussion in any way in any form to
3 inform about the case.
4 Thank you.
13:30:07 5 See you later.
6 (Whereupon, the jury having exited the
7 courtroom, the following proceedings were held:)
8 THE COURT: All right. So a question I had,
9 and this is just further illustrated is the timing of
10 all this, where nobody is getting done on the time
11 anyone's projecting.
12 Have you sat down and figured out where we're
13 going on this, Counsel?
14 MR. SATTERLEY: Your Honor, me and Mr. Maimon
13:31:31 15 did, and unfortunately the number of objections that
16 we've encountered have been greater than we
17 anticipated. We have withdrawn witnesses and we're
18 still working on a stipulation. I've been reaching out
19 to defense counsel this week to see if we can work on a
13:31:45 20 stipulation about economics and to the ability to pay
21 evidence because we have -- the ability to pay, we have
22 financial witnesses that we've subpoenaed or we've
23 deposed that we would play deposition of.
24 THE COURT: Ability to pay --
13:31:59 25 MR. SATTERLEY: Because they chose to do a

51 (Pages 198 to 201)

Page 202	Page 204
<p>1 one-issue trial, the financial --</p> <p>2 THE COURT: Oh, the defense did.</p> <p>3 MR. SATTERLEY: Yeah.</p> <p>4 So there -- for example, there is -- there is a</p> <p>13:32:07 5 corporate representative from J&J that we've deposed</p> <p>6 that we've designated page and lines.</p> <p>7 We've subpoenaed the comptroller in Imerys and</p> <p>8 we got Robert Johnson on that issue. We got Robert</p> <p>9 Johnson on economics.</p> <p>13:32:23 10 So I proposed to defense counsel, in exchange</p> <p>11 for a stipulation on the economics, I will be --</p> <p>12 welcome a stipulation on the ability to pay number so</p> <p>13 we can eliminate all those witnesses on that topic.</p> <p>14 We're still meeting and conferring on that, and we've</p> <p>13:32:41 15 met and conferred, Mr. DeJardin and I, this morning and</p> <p>16 hopefully we can make progress tomorrow -- today,</p> <p>17 tomorrow, and over the weekend. So we will have more</p> <p>18 of a report in the regard next week.</p> <p>19 We have a live -- and I have advised defense</p> <p>13:32:56 20 counsel of this -- several depositions that we're not</p> <p>21 going to play and we're not going to play the -- we had</p> <p>22 three or four hours of testimony of Julie Pier from the</p> <p>23 Lanzo trial, we just don't have time to play it. Even</p> <p>24 though it's great, valuable evidence, we're not going</p> <p>13:33:11 25 to be able to play that.</p>	<p>1 discussion about things.</p> <p>2 THE COURT: You're not offering Horn on</p> <p>3 causation.</p> <p>4 MR. SATTERLEY: If I can get a stipulation with</p> <p>13:34:33 5 defense counsel on the issue, I can meet and confer on</p> <p>6 that. I'm not going to go through any -- general</p> <p>7 causation maybe, but no specific causation.</p> <p>8 MR. ASHBY: We would object. It's cumulative.</p> <p>9 I understand why they need him to do reasonable and</p> <p>13:34:45 10 necessary on medical expenses.</p> <p>11 MR. SATTERLEY: We got medical expenses --</p> <p>12 THE COURT: I understand the damage part.</p> <p>13 MR. SATTERLEY: So I would request that we have</p> <p>14 an opportunity to meet and confer before you lock me on</p> <p>13:34:54 15 a position on this.</p> <p>16 THE COURT: I'm not going to lock you in yet.</p> <p>17 I would just express causation questions some concern</p> <p>18 about being cumulative there. I mean, I have at least</p> <p>19 two or three of these so far.</p> <p>13:35:07 20 MR. SATTERLEY: And, Your Honor, they have</p> <p>21 three or four themselves, so I assume they're going to</p> <p>22 withdraw some of those. But the other -- so I guess my</p> <p>23 point is, going forward, we had to -- just off the top</p> <p>24 of my head, we have documents that we still need to get</p> <p>13:35:20 25 into evidence that I have sent over to defense counsel</p>
Page 203	Page 205
<p>1 So going forward -- so I can sort of -- I don't</p> <p>2 even know what today he's going to do to schedule</p> <p>3 because I don't know Dr. Longo's schedule. I haven't</p> <p>4 talked to him about it.</p> <p>13:33:21 5 Going forward, my original plan was to have</p> <p>6 Dr. Horn here next week and I'm going to have Dr. Horn</p> <p>7 address damages for the most part, and I'm going to try</p> <p>8 to reach out to defense counsel to see if I can get a</p> <p>9 stipulation to shorten that. I'm going to do Dr. Horn.</p> <p>13:33:38 10 I don't know if Dr. Egilman's going to be here</p> <p>11 Monday, or Dr. Longo or Dr. Horn. So I got to figure</p> <p>12 that out. So we have to finish those three witnesses.</p> <p>13 And when I say "damages" with Dr. Horn, it's</p> <p>14 talking about x-rays. The jury has not seen the</p> <p>13:33:52 15 x-rays, the CT scans, things of that nature.</p> <p>16 So that's what we anticipate there.</p> <p>17 THE COURT: You have other experts or is that</p> <p>18 it?</p> <p>19 MR. SATTERLEY: Well, we have Bob Johnson if we</p> <p>13:33:59 20 can't reach a stipulation. We have Bob Johnson. And I</p> <p>21 believe that is all of our expert witnesses.</p> <p>22 We're withdrawing Smith. We're withdrawing</p> <p>23 Moline. We haven't talked about Madigan. We'll let</p> <p>24 counsel know whether we'll withdraw Madigan. I got</p> <p>13:34:24 25 to -- Ms. Clancy and I are going to have to have a</p>	<p>1 at the beginning of the case. Through the request for</p> <p>2 admissions.</p> <p>3 We have Dean McElroy, the plaintiff, which will</p> <p>4 be roughly an hour of testimony or less.</p> <p>13:35:31 5 I have Terry Leavitt will be an hour to an hour</p> <p>6 and 15 minutes of direct testimony from us.</p> <p>7 I have -- we have Susan Leavitt which will be</p> <p>8 30 minutes of testimony.</p> <p>9 We have Pat Downey, which, right now it's over</p> <p>13:35:46 10 four hours of video, but we're going to work to cut</p> <p>11 that down. And I know I'm skipping --</p> <p>12 Oh, we have -- we have one video, 15-minute</p> <p>13 video, of a -- of an exposure witness that -- and I</p> <p>14 think the video, we may or may not play that.</p> <p>13:36:01 15 And we have one other friend we may or may not</p> <p>16 call. Ms. Wheaton.</p> <p>17 And I'm probably missing some evidence.</p> <p>18 THE COURT: So what are you projecting?</p> <p>19 MR. SATTERLEY: Well, what I really need to</p> <p>13:36:12 20 do --</p> <p>21 THE COURT: How many more days do you think</p> <p>22 you're going to need to put on your case?</p> <p>23 MR. SATTERLEY: Well, I don't know because I</p> <p>24 don't know how long defense counsel -- Mr. Brown told</p> <p>13:36:19 25 me this morning he's got three hours more</p>

Page 206	Page 208
<p>1 cross-examination of Dr. Egilman. And so I can't say 2 end date on when I'm going to rest with the uncertainty 3 of how long their crosses are going to be. 4 So what I suggest that we can do is meet and 13:36:38 5 confer tomorrow. We're not in session tomorrow. We 6 can send over a proposal on what we think. Yesterday I 7 sent the proposal over for today, which was rejected, 8 and -- but I think we should just meet and confer and 9 try to work -- work through this. 13:36:52 10 MR. RICHMAN: Just in response, Your Honor -- 11 MR. SATTERLEY: Before I finish. I'm sure I'm 12 missing some evidence that I haven't told Your Honor 13 about, so I don't want to be accused later, well, he 14 never said on that Thursday that there was going to be 13:37:06 15 any -- oh, and McCarthy, for example, me and 16 Mr. DeJardin were meeting and conferring a few weeks 17 ago about whether we could make some stipulations to 18 not call Ed McCarthy, Imerys -- 19 THE COURT: Let me put it this way: I'm going 13:37:17 20 to want a further report next week as to where we are. 21 Yes? 22 MR. RICHMAN: Thank you, Your Honor. I'll just 23 address a couple points. 24 First of all, with the economic stipulation, 13:37:26 25 Mr. Satterley had proposed one weeks ago. We told</p>	<p>1 Plaintiffs have indicated they're calling at a minimum 2 three family members -- two plaintiffs, the plaintiff's 3 mother. Potentially two friends, the Downey video, 4 which is four hours, which would be at least one plus 13:39:02 5 court days. So there is -- frankly, in that 6 schedule -- and I'm putting the economic damages -- 7 well, all damages to the side -- plaintiffs are 8 basically saying we could go another two weeks, which 9 is just simply six court days. So I think that's 13:39:16 10 really what our concern is, and I don't want to, for 11 lack of a better word, kind of kick the can down the 12 road, which is part of the reason we raised it with the 13 Court yesterday, because we're trying to get our 14 experts scheduled as well, and we're getting very 13:39:29 15 little, I guess, finality as far as when we can expect 16 to take the case. 17 THE COURT: Well, I think there is one point 18 here, though, is until we know how long the 19 cross-examinations are, that that -- you know, we have 13:39:41 20 two -- two witnesses in play right now, and -- 21 And what are the estimates for Egilman and 22 Longo for cross-X? 23 MR. BROWN: Your Honor, if I may, we're working 24 on cutting Egilman down to try to get it close to the 13:39:56 25 two hours, but I still think that'll probably be as</p>
Page 207	Page 209
<p>1 him it was rejected. We didn't think we were going to 2 be able to reach one. 3 THE COURT: Would you step outside, please. 4 MR. RICHMAN: So Mr. Satterley proposed an 13:37:49 5 economic stipulation weeks ago. We had rejected it. 6 There had been no communication from him until, I 7 believe, a day or two ago. We can put that issue to 8 an -- as an aside. Let's say -- 9 MR. SATTERLEY: I apologize. Can I correct the 13:38:03 10 record? 11 MR. RICHMAN: No, no, no. 12 THE COURT: No. 13 MR. RICHMAN: So then put the damages issues to 14 the side. 13:38:11 15 The problem we have now, Your Honor, is there 16 are nine trial days remaining in this month. The 17 last -- well, actually the next three weeks are all 18 three-day weeks. There's a -- Court has a dark day on 19 the 12th, the 18th, and the 20th. So we are sort of in 13:38:27 20 the position of the defendants having, I would say, at 21 a minimum, eight to ten -- at least eight witnesses, if 22 not more, very likely more. 23 Plaintiffs now have proposed that they still 24 have -- we still have to conclude the cross-examination 13:38:43 25 of Dr. Egilman, the cross-examination of Dr. Longo.</p>	<p>1 good as it gets. 2 THE COURT: I hear you. 3 MR. BROWN: The problem is redirect, recross. 4 THE COURT: I know. I know. 13:40:05 5 MR. BROWN: Jury questions. 6 THE COURT: Jury questions. 7 We appreciate that. 8 And what about Longo, any ballpark on him? 9 MR. ASHBY: I'm on -- 13:40:14 10 THE COURT: I know you just started -- 11 MR. ASHTON: I'm on page 29 of like 120, but... 12 THE COURT: That's a disturbing figure. 13 MR. MAIMON: It's really disturbing because I 14 only had eight pages in my outline. 13:40:28 15 MR. ASHBY: He's just a better lawyer. 16 THE COURT: There's different types of 17 outlining technique. 18 MR. SATTERLEY: Your Honor, I just want to 19 correct the record. Mr. Richman once again made a 13:40:36 20 misstatement. I don't know if it's intentional or not, 21 but he said that they rejected -- they rejected my 22 economic stip. He actually accepted it and said, we 23 would be willing to do it but Imerys rejected it. 24 MR. RICHMAN: That is a misstatement, 25 Your Honor.</p>

Page 210	Page 212
<p>1 MR. SATTERLEY: Pardon?</p> <p>2 MR. RICHMAN: That is a total misstatement.</p> <p>3 THE COURT: I don't want to hear about their</p> <p>4 negotiations.</p> <p>13:40:57 5 Nobody talk about negotiations on agreements.</p> <p>6 Go ahead.</p> <p>7 MR. DEJARDIN: I do have a question,</p> <p>8 Your Honor. I don't remember what we told the jury --</p> <p>9 what we told the jury as far as when you expected to</p> <p>13:41:05 10 get -- give them the case.</p> <p>11 THE COURT: What I told them -- and I gave a</p> <p>12 little fudge factor -- I said March 4 or 5 is what I</p> <p>13 told them. And, you know, if there's -- if there's a</p> <p>14 slippage of a day, I don't think anyone's going to</p> <p>13:41:20 15 shoot anybody.</p> <p>16 I will look at the hours that are there, but</p> <p>17 I'm not making a decision yet about when the -- when</p> <p>18 the hammer comes down. But I just want to encourage</p> <p>19 everyone to start streamlining your cases and look at</p> <p>13:41:35 20 that and we'll see where we go.</p> <p>21 I will count up tomorrow, if not today, where</p> <p>22 the hours are so you all see where you are so far.</p> <p>23 MR. SATTERLEY: Your Honor, I just wanted to</p> <p>24 raise it so we'll weigh this at a future time is we've</p> <p>13:41:52 25 been spending a lot of time in bench conferences --</p>	<p>1 THE COURT: Have a good one, trip home,</p> <p>2 wherever that might be.</p> <p>3 Actually, once -- plaintiffs counsel, once you</p> <p>4 know what the lineup next week, can you just let me</p> <p>13:43:16 5 know a ballpark.</p> <p>6 MR. SATTERLEY: Oh, Your Honor, one other</p> <p>7 thing. Can we be on the record?</p> <p>8 I sent this morning an email to all counsel of</p> <p>9 record regarding the proposed stipulation regarding the</p> <p>13:43:25 10 Chinese talc and I'll read it into the record and I --</p> <p>11 or I can just email it to Your Honor and carbon copy</p> <p>12 all counsel a proposed stipulation.</p> <p>13 THE COURT: What I would rather see is if</p> <p>14 there's an agreement on the stipulation, let me know</p> <p>13:43:39 15 that, and if there's a dispute, we'll talk about it on</p> <p>16 Monday.</p> <p>17 MR. SATTERLEY: If I could just read into the</p> <p>18 record my proposal just so we made a record of this.</p> <p>19 "Johnson & Johnson talcum powder stopped the use of</p> <p>13:43:50 20 Vermont talc in 2003 and replaced it with Chinese talc.</p> <p>21 The evidence and testimony as to Chinese talc does not</p> <p>22 relate to the claims that Ms. Leavitt brought about her</p> <p>23 exposure to Johnson & Johnson talcum powders which</p> <p>24 predated 2003."</p> <p>13:44:06 25 That -- I propose that to comply with Your</p>
Page 211	Page 213
<p>1 THE COURT: I know.</p> <p>2 MR. SATTERLEY: -- and last week, particularly</p> <p>3 with Mr. Hopkins. Hopkins was on the witness stand for</p> <p>4 five days, five full days, and we spent a lot of time</p> <p>13:42:09 5 in Your Honor's chambers, and I would just request,</p> <p>6 Your Honor, to take that into consideration when</p> <p>7 discussing -- or putting the time down.</p> <p>8 THE COURT: I certainly will. And I -- and I</p> <p>9 generally do. So don't worry. I'm not -- I'm not</p> <p>13:42:25 10 doing this in a second-by-second analysis. And no one</p> <p>11 is going to get cut off, you know, at 1903 seconds.</p> <p>12 I'm going to -- there will be some fudge factor built</p> <p>13 in there, but there's a ballpark we're talking about to</p> <p>14 try and bring this ship in.</p> <p>13:42:41 15 So I'm going to leave it at that for the</p> <p>16 moment. I do want to hear back on Monday what the plan</p> <p>17 is and particularly, you know, estimates of how long</p> <p>18 witnesses are going to take are very helpful.</p> <p>19 Anything else today?</p> <p>13:42:57 20 MR. SATTERLEY: No, Your Honor.</p> <p>21 MR. MAIMON: Thank you, Your Honor.</p> <p>22 MR. RICHMAN: No, Your Honor.</p> <p>23 THE COURT: Have a good weekend.</p> <p>24 MR. BROWN: See you, Judge, have a good</p> <p>25 weekend.</p>	<p>1 Honor's request to take out the pattern and practice</p> <p>2 portion. So we would request that limiting instruction</p> <p>3 if they're going to go into Chinese talc.</p> <p>4 MR. RICHMAN: Just while we're on the record,</p> <p>13:44:24 5 we consider and reject Mr. Satterley's offer.</p> <p>6 THE COURT: All right. Well --</p> <p>7 MR. SATTERLEY: That's nice.</p> <p>8 THE COURT: What I would ask the parties to</p> <p>9 do is --</p> <p>10 Folks, hold on. Hold on, please.</p> <p>11 I want to hear Monday morning what the parties'</p> <p>12 positions are on that or at least before -- I don't</p> <p>13 know if Longo is here on Monday. If Longo is here on</p> <p>14 Monday -- before Longo goes on again, I want to</p> <p>13:44:47 15 discuss -- come back to this, so, parties, I encourage</p> <p>16 you to continue working on it. If worse to comes to</p> <p>17 worst, I'm going to have to devise my own limiting</p> <p>18 instruction and probably make nobody happy.</p> <p>19 So that's it. Thank you.</p> <p>20</p> <p>21 (Whereupon, the proceedings</p> <p>22 were concluded at 1:44 p.m.)</p> <p>23</p> <p>24</p> <p>25</p>

Page 214

1 STATE OF CALIFORNIA)

2) ss.

3 COUNTY OF ALAMEDA)

4

5 I, EARLY K. LANGLEY, do hereby certify:

6 That foregoing proceedings were held in the
7 above-entitled action at the time and place therein
8 specified;9 That said proceedings were taken before me at said
10 time and place, and was taken down in shorthand by me,
11 a Certified Shorthand Reporter of the State of
12 California, and was thereafter transcribed into
13 typewriting, and that the foregoing transcript
14 constitutes a full, true and correct report of said
15 proceedings that took place;16 IN WITNESS WHEREOF, I have hereunder subscribed my
17 hand on February 7, 2019.

18

19

20

21

22



EARLY K. LANGLEY, CSR No. 3537

State of California

23

24

25



55 (Page 214)

Exhibit 19

In The Matter Of:

*Donna Olson and Robert Olson v.
Brenntag North America, Inc. et al*

February 25, 2019

Original File 22519Olson.txt

Min-U-Script® with Word Index

Page 1415

1
2 SUPREME COURT OF THE STATE OF NEW YORK
3 COUNTY OF NEW YORK - CIVIL TERM - PART 7
4 -----X
5 DONNA A. OLSON and ROBERT M. OLSON,
6
7 Plaintiff,
8
9 -against- Index No.
10 190328/2017
11
12 BRENNTAG NORTH AMERICA, INC.;
13 BRENNTAG SPECIALTIES, INC.,
14 Individually, and f/k/a Mineral Pigment
15 Solutions, Inc., as successor-in-interest to
16 Whittaker, Clark & Daniels, Inc.,
17 CYPRUS AMAX MINERALS COMPANY,
18 Individually and as successor-in-interest to
19 American Talc Company, Metropolitan Talc
20 Company, Inc., Charles Mathieu, Inc., and
21 Resource Processors, Inc.;
22 IMERYS TALC AMERICA, INC.,
23 JOHNSON & JOHNSON CONSUMER, INC.;
24 WHITTAKER, CLARK & DANIELS, INC.,
25 Individually and as successor-in-interest
26 To American Talc Company, Metropolitan Talc
Company, Inc., Charles Mathieu, Inc., and
Resource Processors, Inc.;

Defendants.
-----X

17 Jury Trial 60 Centre Street
New York, New York
February 25, 2019

19 B E F O R E:
20 HONORABLE GERALD LEBOVITS,
21 JUSTICE

22 A P P E A R A N C E S:
23 LEVY KONIGSBERG, LLP
24 ATTORNEYS FOR THE PLAINTIFFS
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BY: JEROME H. BLOCK, ESQ.,

-AND-

Page 1416

1
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24 ALLISON RAY, ESQ.,
25
26

Lori A. Sacco
Michael Ranita
Official Court Reporters
* * *

Page 1417

PROCEEDINGS

1 THE COURT: Good morning everyone. And we
2 hope that you all had a wonderful weekend. Whenever
3 I see the lawyers standing and remaining standing
4 after court begins, I wonder why they are standing.
5 It must be because they are very enthusiastic. A
6 wonderful morning so far. This is the agenda as I
7 propose for this morning.
8
9 First we're going to bring down juror number
10 five. I think that is required by the Appellate
11 Division First Department case on point, and I'll
12 give you the citation in a few minutes and we'll see
13 where that goes. The law is that I may not simply
14 excuse for without speaking to her, because that
15 would violate the rights of one side or both sides in
16 this trial. And similarly I may not do that with
17 juror number five without speaking to that juror
18 regardless -- with juror number four, regardless of
19 juror number five has to say, because that would
20 potentially violate the rights of one side or the
21 other or both. And it would be awfully impolite to
22 jurors four or five simply to excuse either or both
23 of them without speaking to them.
24
25 Conversely, I cannot turn the inquiry into a
26 trial within a trial. That would be disrespectful
and it would wind up with jurors being very unhappy

Page 1418

PROCEEDINGS

1 with all of us and it wouldn't do any good.
2
3 So, the case law suggests that we need to
4 tread very lightly on this issue. And to the extent
5 that we could get some consent agreements, that would
6 be terrific. Once we resolve the question of four
7 and five, and I would like to do that first, because
8 I'm sure juror number five is not very happy that we
9 didn't resolve her claim on Friday, but it was 4:30
10 and it was impossible. But she doesn't want to sit
11 around probably with juror number four longer than
12 she has to. I think we should resolve that first.
13
14 The next thing we should do is go back to
15 juror number three. And I did plenty of research on
16 that as well. There are two Court of Appeals
17 opinions, I'll give you the citations, dealing in the
18 criminal context and in different procedural aspects
19 with what we should do. But it comes down to this.
20 If a juror states that he or she is biased in favor
21 of one side or another or has an issue that would
22 cause that juror not to be suitable for one reason or
23 another, in other words, challengeable for cause,
24 then the Court must conduct an inquiry and assure
25 that the juror unequivocally states that he or she is
26 committed to a fair trial. And we'll decide the case
based only on the evidence and not on any external

Page 1419

1 PROCEEDINGS
2 factor.
3 I read the minutes from Friday morning, but I
4 know that we had a further inquiry Friday afternoon,
5 and I don't have those minutes from Friday afternoon.
6 Does anybody have those minutes?
7 MR. BROCK: I have them, your Honor. I'm
8 happy to bring them up. You're talking about the
9 transcript of the conversation with her?
10 THE COURT: The second one.
11 MR. BROCK: Yes.
12 THE COURT: And you have that already?
13 MR. BROCK: Yes.
14 MR. BLOCK: I do.
15 THE COURT: That's excellent then. I would
16 like to read it before I speak to juror number three,
17 and I know that you're going to have arguments about
18 this. I would like to read it for myself first to
19 see whether or not she said anything equivocal or
20 unequivocal.
21 The next thing --
22 MR. BROCK: With permission, your Honor, I
23 will let you know what that is. It's a clip of all
24 of your questions and answers. So it's not in
25 consecutive pages. The second, the afternoon session
26 will be towards the back of that document.

Page 1420

1 PROCEEDINGS
2 THE COURT: Well, I thank you very much.
3 MR. HARTLEY: Your Honor, we have an actual
4 copy of the transcript rather than --
5 THE COURT: And so do I. I just got one
6 right now.
7 MR. BLOCK: Your Honor, could I say one
8 thing?
9 THE COURT: Yes. In a moment. So then we'll
10 continue on with the Court's rulings on most of your
11 evidentiary issues.
12 MR. BLOCK: We -- we would say, your Honor,
13 that we know that there are some pending rulings on
14 documents, on Dr. Vaughn's video. However, I wanted
15 to alert the Court that we have an out of town
16 witness today, Dr. William Longo. Dr. Longo is here
17 from Atlanta. He's available to testify today and
18 tomorrow. I think it's achievable to get Dr. Longo
19 done today, tomorrow, so long as we have sufficient
20 court time. I know these juror issues are important
21 to deal with, and I fully understand we have to deal
22 with them. Once we have dealt with the juror issues,
23 we're prepared to call Dr. Longo as our next witness.
24 As we explained, Dr. Webber was not available to come
25 back, but we are booking a date for him to come back
26 to complete his cross examination and any redirect,

Page 1421

1 PROCEEDINGS
2 et cetera. So, I wanted to alert the Court that --
3 that we do have a witness that we would like to call
4 once we resolve the juror issues.
5 THE COURT: Is that a different way of saying
6 that I shouldn't decide the evidentiary issues until
7 after Dr. Longo testifies, because you need him to
8 testify right now?
9 MR. BLOCK: We do not -- we do not need a
10 ruling on the documents that you heard argument about
11 the other day and we do not need a ruling.
12 THE COURT: The other day. I'm hearing
13 arguments every day.
14 MR. BLOCK: Okay. Your Honor, no. There are
15 no rulings that the plaintiff needs in advance of Dr.
16 Longo's testimony this morning.
17 MR. BROCK: So, your Honor, from our
18 perspective, we have a motion in limine with regard
19 to Dr. Longo. And I believe as we discussed when we
20 were talking about the witness' motions, and hearing
21 them just in advance of their testimony, we do need a
22 few minutes on Dr. Longo this morning, maybe ten or
23 15 minutes to present our -- our position on his
24 qualifications. Get some of his opinions. I think
25 when we have done that, he's either in or out.
26 That's out of the way and we'll have that done.

Page 1422

1 PROCEEDINGS
2 THE COURT: So, you agree I shouldn't decide
3 the other issues, the documents, the hearsay, the
4 business records, the stipulations, the depositions?
5 MR. BROCK: We have objections to some of the
6 exhibits that they, I think, plan to use today.
7 THE COURT: Whether it's admissible for the
8 truth or notice or other reasons. I have decisions
9 on everything except Dr. Blount and 53-A and B.
10 MR. BROCK: Okay.
11 MR. BLOCK: Your Honor, we are --
12 THE COURT: Later.
13 MR. BLOCK: Right. We're prepared to move
14 forward. And we think, of course I understand you're
15 going to hear their motion on Dr. Longo, once that
16 motion is heard, we think we could proceed from
17 there.
18 THE COURT: Okay. So, I propose then if
19 that's what you all want to do, that we resolve four
20 and five and then we go to three and then we hear the
21 evidentiary issues about Dr. Longo. Assuming that
22 Dr. Longo testifies, we'll hear from Dr. Longo
23 quickly. And if Dr. Longo doesn't testify, then
24 we'll go into the evidentiary rulings. Otherwise the
25 evidentiary rules will come on if you want them on
26 Thursday. By Thursday they will be in writing for

Page 1423

1 PROCEEDINGS

2 you.

3 MR. BLOCK: Okay.

4 THE COURT: Because this is what I plan to do

5 with all of your objections, given that this is the

6 first asbestos talc trial.

7 MR. BLOCK: Thank you.

8 THE COURT: It will be a blueprint for all

9 future trials on every single one of your issues with

10 citations.

11 MR. BLOCK: Okay.

12 THE COURT: Okay.

13 MR. BROCK: We might need to object more.

14 I'm just teasing.

15 THE COURT: You most certainly can.

16 MR. BROCK: I know that. I know that.

17 THE COURT: You might want to save your

18 objections for after you hear the rulings rather than

19 before.

20 MR. BROCK: Exactly. Exactly.

21 THE COURT: And for those of you who know

22 Judge Mendez, hello. Those of you who don't, this is

23 Judge Mendez, who is the supervising judge for

24 asbestos matters in New York City.

25 MR. BROCK: I was going to mention, I would

26 like to have a video, I would like to show your Honor

Page 1424

1 PROCEEDINGS

2 of the program that Ms. -- that juror number three

3 watched on Friday morning.

4 THE COURT: That's impressive. How do you

5 know that?

6 MR. BROCK: Well, I know she said she watched

7 Channel 4 on Friday morning before court or she

8 overheard the program that was on Channel 4. And I

9 have a clip of the discussion that took place about

10 Johnson & Johnson Baby Powder on Channel 4 on Friday

11 morning.

12 THE COURT: Impressive. What does it say?

13 How long is it?

14 MR. BROCK: It's about three minutes.

15 THE COURT: I will look at that tape before

16 we call juror number three in.

17 MR. BROCK: Thank you.

18 THE COURT: But we'll save oral arguments

19 until after I read the proceedings and after I --

20 MR. BROCK: Sure.

21 THE COURT: -- after I watch the tape.

22 MR. BROCK: Okay.

23 THE COURT: After we all watch the tape. See

24 here we have on page 1406 with regard to juror number

25 three my question. "We can all be filled with doubts

26 and concerns, but we would like to keep you as a

Page 1425

1 PROCEEDINGS

2 juror, but only if you can assure us once again

3 definitively that you will be fair and square to both

4 sides. That you will keep an open mind. That you

5 will remove those, whatever you heard from --

6 whatever you heard from your thoughts. So you will

7 remove those from your thoughts, whatever you heard.

8 And that you will decide the case only on the

9 evidence, and only on the evidence that you hear in

10 court. And that you will follow the Court's

11 instructions. And do you have any doubt about that?

12 Juror number three: I don't have any doubt that I

13 can do that to the best of my ability."

14 Thank you very much. Is that not unequivocal?

15 I know I said I don't want to hear any oral

16 arguments. Apparently I have changed my mind just

17 with regard to that one statement.

18 MR. BLOCK: You just said, your Honor, is

19 that not unequivocal or did you say is that not

20 unequivocal?

21 THE COURT: It doesn't matter. It comes out

22 to the same thing.

23 MR. HARTLEY: It is unequivocal, your Honor.

24 I think it was unequivocal.

25 THE COURT: It's unequivocal, okay.

26 MR. BROCK: I think -- I think the issue is

Page 1426

1 PROCEEDINGS

2 to the best of my ability. And that's what she has

3 said in the interview process several times. I would

4 do that to the best of my ability.

5 THE COURT: She says it a little bit stronger

6 the second time, I think. No.

7 MR. BROCK: She also says she was alarmed.

8 She says --

9 THE COURT: Okay. Okay. Now we're going

10 into the argument. I understand.

11 MR. BLOCK: Your Honor, on juror number

12 three, let me just state the plaintiffs' position is

13 that we don't think that any further interviewing of

14 juror number three is needed in light of her

15 responses to the Court's questions that have been on

16 record. In fact, the second time your Honor

17 questioned juror number three, she emphatically said

18 to you, I have put that out of my head. And that's

19 one of the first things that came up in your

20 afternoon questioning of her. At this point to

21 question her three times about this, unless your

22 Honor feels that there is something new to question

23 her about, I don't know how many times that she can

24 unequivocally state that she's put this out of her

25 mind. That she could be fair to both sides. We

26 think at some point it becomes a little bit intrusive

Page 1427

1 PROCEEDINGS

2 to keep going back to juror number three and asking
3 her the same questions. Of course I defer to your
4 Honor if you think there is anything more to ask. We
5 don't think there is necessarily a reason to question
6 juror number three again, your Honor.

7 THE COURT: Okay. I would like to avoid
8 speaking to her a third time also. Let me give you
9 the citations if I may. First one is Avila versus
10 City of New York, and it's at 73 A.D.3d 444. That's
11 a 2010 case in which the First Department unanimously
12 reversed an \$8 million verdict after the judge,
13 despite consulting both counsel and without objection
14 now, declined to interview a juror to find what
15 caused her to leave the jury room during
16 deliberations and started to get into a physical
17 fight with another juror.

18 MR. BROCK: What did the lawyers say? Just
19 let them work it out?

20 THE COURT: The Court gave the entire jury a
21 modified Allen charge. Do you know what an Allen
22 charge is?

23 MR. BLOCK: Yes.

24 THE COURT: Okay. And told the jury that the
25 heated discussions that caused juror number three,
26 how coincidental is that, to become very upset and a

Page 1428

1 PROCEEDINGS

2 little bit fearful. Then instructed the jury to
3 deliberate in an adult way, without invective or
4 threats. And sent them back to resume deliberations.
5 And that was after learning that -- I see. There was
6 a problem. Juror number three continued to have an
7 issue. Juror number three wrote, "There is a juror
8 who has been intimidating and threatening. In
9 addition, he has physically threatened another juror
10 and the situation has ended and other jurors
11 intervened. I should not be -- I do not believe I
12 should be intimidated or feel threatened to change my
13 decision. I do not feel comfortable because of this
14 person." And the Court -- And then defense counsel
15 protested and proposed that before replacing juror
16 number three the Court interview all the jurors to
17 determine whether another juror was exhibiting
18 threatening behavior. The Court declined to do that.
19 And thus the reversal.

20 Another important decision which we'll get to
21 with regard to juror number three is People versus
22 Warrington, W-A-R-R-I-N-G-T-O-N, 28 NY3d 1116, and
23 that's a 2016 decision in which "The Court must first
24 and foremost in unequivocal terms expressly state
25 that his or her prior state of mind concerning either
26 the case or either of the parties will not influence

Page 1429

1 PROCEEDINGS

2 the verdict. The very point of the unequivocal
3 assurance of impartiality is to allow a juror to
4 purge a previous opinion by expressly declaring that
5 he or she will not be influenced. Thus, where a
6 perspective juror unambiguously states, despite
7 pre-existing opinions that might indicate bias, that
8 he or she will decide the case impartially and based
9 on the evidence, the trial court has the discretion
10 to deny the challenge for cause if it determines that
11 the juror's promise to be impartial is credible."

12 Wisholek, W-I-S-H-O-L-E-K, versus Douglas, is
13 another case. That's at 280 AD2d 220, it's a Fourth
14 Department case from 2001 in which the Appellate
15 Division Fourth Department wrote that "The Court
16 properly refused to discharge a sworn juror because
17 first the Court must find that the juror is grossly
18 unqualified and be convinced that the juror's
19 knowledge will prevented that person from rendering
20 an impartial verdict."

21 Then there is Troutman, T-R-O-U-T-M-A-N,
22 versus 957 Nassau Road, LLC at 70 AD3d 672 Second
23 Department 2010 case, discussing CPLR 4106, which
24 provides, "In a civil case four out of five
25 submission of the case to the jury if a seated juror
26 for any reason is unable to perform his or her duty,

Page 1430

1 PROCEEDINGS

2 the trial court may remove the juror and replace the
3 juror with an alternate juror. There has to be an
4 indication that the juror in question convinced a
5 bias or prejudice towards one of the parties as
6 opposed simply a problem with another juror." It's
7 got to effect the proceedings in a certain way.

8 Let us get juror number five. We'll try to
9 move this along quickly. I understand the concerns.

10 COURT OFFICER: All rise. Juror entering.
11 Just take a seat.

12 THE COURT: Please.

13 JUROR: Hi.

14 THE COURT: Sit down in your regular seat,
15 please. Thank you so very much. Everybody, please
16 be seated. Thank you. I will get a little bit
17 closer to you if I may, because the acoustics in this
18 courtroom are not very good. This way you can hear
19 me if, I may.

20 JUROR: Okay.

21 THE COURT: The officer told me that you had
22 a concern. The officer told me that it was -- it was
23 after 4 o'clock on Friday, it might have been close
24 to 4:30, that you wanted to express to me. And so
25 what I propose to do is for everybody to go into
26 the -- my robing room so that what you say you should

<p style="text-align: right;">Page 1431</p> <p>1 PROCEEDINGS</p> <p>2 feel free in telling us what's going on without</p> <p>3 worrying that anybody in the audience might hear.</p> <p>4 And in addition to that, I will direct that the</p> <p>5 minutes not be available to anyone but the parties</p> <p>6 and to no one else, subject to further court order,</p> <p>7 so that nobody could even get a copy of these minutes</p> <p>8 without the permission of the Court. And that will</p> <p>9 further assure that you could speak confidentially</p> <p>10 and privately to us, okay.</p> <p>11 So, now we're just going to step into the</p> <p>12 back, only the lawyers, and you should wait one</p> <p>13 minute, and the officer will escort you one minute</p> <p>14 when we are ready for you. No worries.</p> <p>15 (Whereupon the proceedings are sealed.)</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p>26</p>	<p style="text-align: right;">Page 1433</p> <p>1 PROCEEDINGS</p> <p>2</p> <p>3 (Whereupon this page is intentionally left</p> <p>4 blank.)</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p>26</p>
<p style="text-align: right;">Page 1432</p> <p>1 PROCEEDINGS</p> <p>2</p> <p>3 (Whereupon this page is intentionally left</p> <p>4 blank.)</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p>26</p>	<p style="text-align: right;">Page 1434</p> <p>1 PROCEEDINGS</p> <p>2</p> <p>3 (Whereupon this page is intentionally left</p> <p>4 blank.)</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p>26</p>

<p>Page 1435</p> <p>1 PROCEEDINGS</p> <p>2</p> <p>3 (Whereupon this page is intentionally left</p> <p>4 blank.)</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p>26</p>	<p>Page 1437</p> <p>1 PROCEEDINGS</p> <p>2</p> <p>3 (Whereupon this page is intentionally left</p> <p>4 blank.)</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p>26</p>
<p>Page 1436</p> <p>1 PROCEEDINGS</p> <p>2</p> <p>3 (Whereupon this page is intentionally left</p> <p>4 blank.)</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p>26</p>	<p>Page 1438</p> <p>1 PROCEEDINGS</p> <p>2</p> <p>3 (Whereupon this page is intentionally left</p> <p>4 blank.)</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p>26</p>

<p>Page 1439</p> <p>1 PROCEEDINGS</p> <p>2</p> <p>3 (Whereupon this page is intentionally left</p> <p>4 blank.)</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p>26</p>	<p>Page 1441</p> <p>1 PROCEEDINGS</p> <p>2</p> <p>3 (Whereupon this page is intentionally left</p> <p>4 blank.)</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p>26</p>
<p>Page 1440</p> <p>1 PROCEEDINGS</p> <p>2</p> <p>3 (Whereupon this page is intentionally left</p> <p>4 blank.)</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p>26</p>	<p>Page 1442</p> <p>1 PROCEEDINGS</p> <p>2</p> <p>3 (Whereupon this page is intentionally left</p> <p>4 blank.)</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p>26</p>

Page 1443	Proceedings Page 1445
<p>1 PROCEEDINGS</p> <p>2</p> <p>3 (Whereupon this page is intentionally left</p> <p>4 blank.)</p> <p>5 (Continue on the next page.)</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p> <p>26</p>	<p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>
Proceedings Page 1444	Proceedings Page 1446
<p>1 (This page intentionally left blank.)</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p>1</p> <p>2</p> <p>3</p> <p>4 (This portion intentionally left blank.)</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10 THE COURT: Do you want to show me that tape?</p> <p>11 MR. BROCK: Yes, your Honor. Your Honor, are you</p> <p>12 ready for us to play?</p> <p>13 THE COURT: Yes, please.</p> <p>14 MR. BROCK: So the segment that we will play is a</p> <p>15 segment that aired on channel four, NBC, on Friday morning</p> <p>16 of last week.</p> <p>17 THE COURT: I'm sorry, the time?</p> <p>18 MR. BROCK: I don't have the precise time that this</p> <p>19 segment ran. I just know that it was in that morning</p> <p>20 segment on Friday.</p> <p>21 MR. KURLAND: It is a segment on the Today Show</p> <p>22 which is a program that airs between 7:00 a.m. and 9:00 a.m.</p> <p>23 on channel four. It's the only program that airs during</p> <p>24 that time and it's the only segment from that show that</p> <p>25 mentioned Johnson & Johnson. So we have come to the</p>

Proceedings	Page 1447	Proceedings	Page 1449
<p>1 conclusion that based on the juror's prior statements, this</p> <p>2 is more likely than not the clip she saw.</p> <p>3 THE COURT: Thank you.</p> <p>4 (Whereupon, a video was played in open court.)</p> <p>5 MR. BROCK: So, your Honor, I think it is evident</p> <p>6 from what the juror number three observed, or heard on</p> <p>7 Friday morning, that she now has information that will not</p> <p>8 be admitted into evidence in this trial.</p> <p>9 There is reference to applying talc in the genital</p> <p>10 area which invokes the issues of ovarian cancer. It's very</p> <p>11 specific about government investigations. The piece on the</p> <p>12 Reuters story that came out in December is presented as</p> <p>13 though this was something that was newly discovered. All of</p> <p>14 this is consistent with the description that she gave of the</p> <p>15 news broadcast where she said that she heard that over</p> <p>16 13,000 people had sued the company and that the FDA is</p> <p>17 getting involved, and other areas of the government. I'm</p> <p>18 not only sure are taking the asbestos that they found or</p> <p>19 taking it more seriously. The findings of asbestos fibers,</p> <p>20 asbestos particles that cause cancer. It's not a piece that</p> <p>21 is -- presents, adequately, both sides of the story. It has</p> <p>22 brief segments of plaintiffs in cases saying that Johnson &</p> <p>23 Johnson is not doing the right thing. It invokes, in that</p> <p>24 way, other lawsuits and other claims, just as the 13,000</p> <p>25 people who were suing does that.</p>		<p>1 THE COURT: When --</p> <p>2 MR. BROCK: I could try.</p> <p>3 THE COURT: When you are finished, I have some</p> <p>4 thoughts.</p> <p>5 MR. BROCK: That's fine.</p> <p>6 She says that what she saw could potentially sway</p> <p>7 her in the direction of the plaintiffs, and she says,</p> <p>8 several times in the morning, and in the afternoon session,</p> <p>9 that she would do my very best not to think about it.</p> <p>10 Now, in the afternoon, you know, after saying, I</p> <p>11 would need some time to put this out of my mind, she made</p> <p>12 the comment that I've forgotten about it. It's out of my</p> <p>13 mind. I'm not considering it. Um, I think she is trying to</p> <p>14 convey that she would try to be fair, but I think that the</p> <p>15 comments that she's made and the presentation that she seen</p> <p>16 on TV, she seen things that are not going to be in evidence</p> <p>17 in this case. She is not going to be able to put those out</p> <p>18 of her mind. It's not some kind of artificial exercise</p> <p>19 where she is thinking about it in the morning saying, maybe</p> <p>20 in time I could put this out of my mind, and three hours</p> <p>21 later she says it's out of my mind. I'm ready to go.</p> <p>22 I just don't think that this juror, based on what</p> <p>23 she has seen and what she has said, should be a juror on</p> <p>24 this case.</p> <p>25 THE COURT: Okay. So I have a couple of thoughts</p>	
Proceedings	Page 1448	Proceedings	Page 1450
<p>1 When she's asked in an open-ended way in the</p> <p>2 morning how that will -- what -- "How do you think what you</p> <p>3 overheard will affect you, if at all?"</p> <p>4 She did not give an unqualified assurance that she</p> <p>5 could be fair and impartial. She said, "I'm not sure. I</p> <p>6 was a little alarmed. I can wait to make my decision based</p> <p>7 on what I hear, but I don't know if this will -- this may or</p> <p>8 may not sway me a little bit. It wouldn't push me like a</p> <p>9 hundred percent towards one party or the other, but it might</p> <p>10 affect me a little bit."</p> <p>11 And you ask her what -- "How would it affect you 'a</p> <p>12 little bit?"</p> <p>13 "Just that it's in the back of my mind, what I</p> <p>14 heard today."</p> <p>15 And you ask, "Can you take it out of your mind with</p> <p>16 time?"</p> <p>17 "Probably, yes."</p> <p>18 And you ask her, "Why do you think you would need</p> <p>19 some time?"</p> <p>20 And she said, "I would do my best to do that."</p> <p>21 You ask her the question, "Do you think you will</p> <p>22 succeed in striking it from your mind as if it never</p> <p>23 happened?"</p> <p>24 And she said, "I can't say a hundred percent sure</p> <p>25 that I can a hundred percent do that."</p>		<p>1 right off the bat.</p> <p>2 MR. BROCK: Sure.</p> <p>3 THE COURT: I wondered over the weekend whether it</p> <p>4 was really true that she had watched a broadcast that was</p> <p>5 almost five minutes long, and there were a couple of reasons</p> <p>6 why I could have doubted her. One was that she remembered</p> <p>7 only a couple of things from the show, the 13,000, the</p> <p>8 government is going further, and it seems to me that that</p> <p>9 would not be something that would take up the full five</p> <p>10 minutes. That might be a 30 second broadcast, if that were</p> <p>11 the case.</p> <p>12 But now that I've seen the broadcast, I know that</p> <p>13 it's more than 30 seconds, and it's about three minutes, as</p> <p>14 we've heard Counsel say, give or take. I did not time it.</p> <p>15 MR. BROCK: It seemed longer than that to me, but I</p> <p>16 think we had it timed around three minutes.</p> <p>17 MR. BLOCK: We could provide an exact number.</p> <p>18 That's determinable.</p> <p>19 THE COURT: She's closer to being right than wrong.</p> <p>20 And the second thing that I wanted to say is the -- the</p> <p>21 tape-recording itself, I'm not relying on this exclusively,</p> <p>22 but I think because you've mentioned it, I should mention</p> <p>23 it, also. It was arguably a balanced presentation in which</p> <p>24 the Today Show interviewed or recorded the chief executive</p> <p>25 officer of Johnson & Johnson giving J&J's position. It</p>	

Proceedings	Page 1451	Proceedings	Page 1453
<p>1 might have been from a press conference. I'm not sure. He</p> <p>2 was standing up and speaking, and it seemed a little bit</p> <p>3 rehearsed, so it probably was not an interview, but it shows</p> <p>4 to the jurors that Johnson & Johnson has denied all the</p> <p>5 allegations, and they gave some specificity. And in</p> <p>6 addition to the Today Show's noting that plaintiffs had won</p> <p>7 some cases, it also pointed out that J&J has won some cases.</p> <p>8 So I -- my feeling after watching that video is</p> <p>9 that it was a fair presentation, but it doesn't matter.</p> <p>10 What matters is her -- the juror's ultimate view of what she</p> <p>11 should do with it. And so the next thing that I wanted to</p> <p>12 say, and it's with regard to that, is that I asked her</p> <p>13 whether she could assure the Court that she could strike it</p> <p>14 from her mind, but is that really the standard. The</p> <p>15 standard is, given that everybody has views and thoughts,</p> <p>16 and maybe even biases. The idea is for them to leave their</p> <p>17 views and biases at the courthouse steps when they walk into</p> <p>18 court, and then the issue is whether they could render a</p> <p>19 fair and impartial verdict based only on the evidence and</p> <p>20 not whether they could strike it out of their minds</p> <p>21 completely. But despite that, whether they could give both</p> <p>22 sides a fair trial, and it was a little bit hazy the first</p> <p>23 time I spoke to her, because it's possible that she</p> <p>24 conflated my question about striking the entire TV segment</p> <p>25 from her mind with whether she could be fair, neutral and</p>		<p>1 she doesn't feel that way.</p> <p>2 The second way, possibly, is that she is not sure</p> <p>3 whether she could take it out of her mind, and she is</p> <p>4 discussing that with saying, "I'm not smart enough to make</p> <p>5 the right decision for this case." But I don't agree with</p> <p>6 that second view, because I looked at her and I assessed her</p> <p>7 credibility, and she was sincere. And that's the perineal</p> <p>8 question that jurors have, and which judges have, and that</p> <p>9 is, how do you decide a case? With all the deciding of</p> <p>10 cases that judges do day in and day out, I defy you to find</p> <p>11 a judge who is able to explain fully how the judge came to</p> <p>12 make the decision.</p> <p>13 Judges are tortured by rendering decisions. All</p> <p>14 people are when it comes to something important. And I find</p> <p>15 myself often in a situation where I've heard the evidence in</p> <p>16 the case, um, I have no idea how to rule. It's only after I</p> <p>17 give it some thought that I get a good feeling for how I</p> <p>18 should rule.</p> <p>19 So she is going through the same question. That's</p> <p>20 what she's thinking about, not whether she could strike it</p> <p>21 from her mind. And so having digressed, I go back to the</p> <p>22 transcript:</p> <p>23 "The Court: We think you are," meaning smart</p> <p>24 enough. "So all that, and you've already been selected as a</p> <p>25 juror. We can all be full with doubts and concerns, but we</p>	
Proceedings	Page 1452	Proceedings	Page 1454
<p>1 impartial, I did not do that. My question was a lot</p> <p>2 clearer. On page -- pages 1405 of the transcript and 1406,</p> <p>3 so it's the part that I read a little bit earlier, so I'll</p> <p>4 begin with this. The first part -- this is juror number</p> <p>5 three -- "The first part" -- this is juror number three.</p> <p>6 "The first part of today it was a little in my mind, but</p> <p>7 it's not in my mind anymore, so I'm not even thinking about</p> <p>8 that."</p> <p>9 "THE COURT: Are you sure --</p> <p>10 "JUROR NUMBER THREE: Yes, actually --</p> <p>11 "THE COURT: -- that you will decide the case fair</p> <p>12 and square to both sides?"</p> <p>13 So she said, yes, actually to the question that she</p> <p>14 is not even thinking about it, but now she hears my full</p> <p>15 question, which is, "Can you decide the case fair and square</p> <p>16 to both sides?"</p> <p>17 And juror number three is now -- is not saying I'm</p> <p>18 going to try to do my best. It's, "I'm going to do my best.</p> <p>19 But it is a lot of information. I don't know if I'm allowed</p> <p>20 to say this, but I don't think I'm smart enough to make the</p> <p>21 right decision for this case."</p> <p>22 There are two ways to view that statement. One is</p> <p>23 that she really is being fair and neutral to both sides</p> <p>24 because she's not coming to an opinion. If she had relied</p> <p>25 on that TV segment, she would have relied on an opinion, but</p>		<p>1 would like to keep you as a juror, but only if you could</p> <p>2 assure us, once again, definitively that you will be fair</p> <p>3 and square to both sides that you will keep an open mind,</p> <p>4 that you will remove those, whatever you heard from your</p> <p>5 thoughts."</p> <p>6 So now I again ask her to remove it from her</p> <p>7 thoughts and that you will decide the case only on the</p> <p>8 evidence, and only on the evidence that you hear in court,</p> <p>9 and that you will follow the Court's instructions, and do</p> <p>10 you have any doubt about that.</p> <p>11 "JUROR NUMBER THREE: I don't have any doubt that I</p> <p>12 can do that to the best of my ability."</p> <p>13 She did not use the word try. She's -- to the best</p> <p>14 of her ability. And I think that that is an unequivocal</p> <p>15 expression that she will do everything, more than what is</p> <p>16 required, that she will decide the case based only on the</p> <p>17 evidence. That she will decided case based only on the</p> <p>18 evidence that she heard in court. That -- that she'll be</p> <p>19 fair and square to both sides. That she will keep an open</p> <p>20 mind, that she will follow the Court's instructions. And</p> <p>21 even that you will remove from your mind whatever you heard</p> <p>22 about the TV show. She was even unequivocal about that.</p> <p>23 And therefore, the motion for -- to remove juror</p> <p>24 number three is denied. It is possible that I might change</p> <p>25 my mind depending on whether juror number three gets back to</p>	

Proceedings	Page 1455	Proceedings	Page 1457
<p>1 us with further thoughts. I do not plan to ask her any</p> <p>2 further questions. I think that it would be tedious for</p> <p>3 her. It would raise too many questions in her mind. And</p> <p>4 besides, we don't need to because we have a very clear</p> <p>5 record now, and that would be that. But she knows that she</p> <p>6 should talk to us if anything else comes up.</p> <p>7 So we are going to bring the -- oh, you still</p> <p>8 wanted to talk for about ten minutes about that witness.</p> <p>9 Let's do that.</p> <p>10 MR. KURLAND: Your Honor, understanding the Court's</p> <p>11 rulings and the discussion we've had on the record this</p> <p>12 morning, for the sake of the record, Johnson & Johnson takes</p> <p>13 an exception to your ruling and does believe as this time</p> <p>14 that jurors three, four and five should all be removed from</p> <p>15 the case.</p> <p>16 However, we understand the Court's position. We</p> <p>17 understand the remedies the Court has crafted at this point,</p> <p>18 but we just wanted to make that objection clear on the</p> <p>19 record.</p> <p>20 THE COURT: Clear, and the record is preserved.</p> <p>21 You now have a very good record for both sides, and the</p> <p>22 Court's ruling is also very clear. So let us move on,</p> <p>23 please.</p> <p>24 MR. BROCK: Your Honor, we would present, now, our</p> <p>25 motion with regard to Dr. Longo, and my colleague Allison</p>		<p>1 ratio, parallel sides, things like that. And Dr. Longo, we</p> <p>2 expect, based on his prior testimony and his expert reports</p> <p>3 in this case, will testify that that is how he is picking</p> <p>4 out asbestos fibers, by using these counting criteria from</p> <p>5 the regulations.</p> <p>6 The problem, your Honor, is as Dr. Webber testified</p> <p>7 on cross examination, those counting criteria are not the</p> <p>8 definitional portion of the statutes and regulations. Those</p> <p>9 same statutes and regulations defined asbestos as the</p> <p>10 asbestiform varieties of the minerals.</p> <p>11 So there's sort of two processes in place. One is</p> <p>12 defining what asbestos is, and the other is defining what to</p> <p>13 count. And Dr. Longo is conflating those two things to</p> <p>14 mislead the jury and to cover up the fact that he is not</p> <p>15 counting asbestos. He is counting something else.</p> <p>16 And for that reason we think that his findings are</p> <p>17 not scientifically reliable, and his methodology is not</p> <p>18 scientifically reliable.</p> <p>19 A third problem with Dr. Longo is that his testing</p> <p>20 lacks foundation because the samples that he is testing are</p> <p>21 coming from unknown sources. They are coming from plaintiff</p> <p>22 firms, they are coming from eBay, they are coming from the</p> <p>23 internet. They are old, and most of them are opened. And</p> <p>24 he will testify, we expect, that all but four of the bottles</p> <p>25 that he has tested were unsealed. Three bottles were sealed</p>	
Proceedings	Page 1456	Proceedings	Page 1458
<p>1 Ray will do that.</p> <p>2 MS. RAY: Your Honor, I'll be brief.</p> <p>3 As I'm sure you reviewed our motion in limine, our</p> <p>4 written motion in limine, we are arguing that Dr. Longo</p> <p>5 should be excluded on a number of grounds, and I'll go</p> <p>6 quickly through each one.</p> <p>7 So the first is that we are arguing that his TEM</p> <p>8 methodology cannot identify asbestiform minerals. And as</p> <p>9 such, it is not reliable, not scientifically reliable for</p> <p>10 his opinions about the findings of asbestos in these talcum</p> <p>11 powders.</p> <p>12 So he uses TEM methodology to look and he finds</p> <p>13 minerals and fibers, but he admits that he cannot</p> <p>14 distinguish between asbestiform and non-asbestiform</p> <p>15 varieties of those minerals and fibers. And because the</p> <p>16 issue is asbestos, which requires the asbestiform form of</p> <p>17 these minerals, Dr. Longo's testing is not scientifically</p> <p>18 reliable. And Dr. Longo will not be able to argue that</p> <p>19 there are a lot of scientists who agree with him. He falls</p> <p>20 back to a position that what he is counting is following EPA</p> <p>21 regulations and other regulations similar to the testimony</p> <p>22 that your Honor heard and the jury heard from Dr. Webber,</p> <p>23 which is -- and he is correct in this, that there are</p> <p>24 regulations that specify how to count particular fibers</p> <p>25 based on the shape and morphology of the fibers, the aspect</p>		<p>1 that were obtained from one plaintiff's firm. One of the</p> <p>2 sealed bottles was purchased by them off the shelf. All of</p> <p>3 the sealed bottles are contaminant free, but we are looking</p> <p>4 at a bunch of unsealed bottles that were purchased from</p> <p>5 unknown sources, some of them as long as 70 -- excuse me,</p> <p>6 some of them were made as long as 70 years ago. And we</p> <p>7 don't have any idea what happened to the bottles in the</p> <p>8 interim.</p> <p>9 And as we laid out in our motion, I don't know if</p> <p>10 your Honor took the time to look at some of the internet</p> <p>11 videos out there. The world is a strange place, and people</p> <p>12 do refill these bottles. There are videos out there on how</p> <p>13 to refill the bottles. How to get talc even in bottles that</p> <p>14 haven't had the tops taken off. So we just don't know what</p> <p>15 is going on with these sources. And for that reason, the</p> <p>16 findings are not reliable because the starting point is not</p> <p>17 reliable.</p> <p>18 Finally, I want to argue about two other points.</p> <p>19 One is what I'm going to call extrapolation. So Dr. Longo</p> <p>20 makes findings about particular samples that he takes from</p> <p>21 particular bottles, and then what he do is he multiplies</p> <p>22 those out to get millions and millions and millions of</p> <p>23 fibers based on what he sees in one slide. And there is no</p> <p>24 scientific basis for that kind of statistical extrapolation.</p> <p>25 Dr. Longo is not using the kind of sophisticated</p>	

Proceedings	Page 1459	Proceedings	Page 1461
<p>1 statistical math that would be required to make a prediction</p> <p>2 about what he is finding from one sample to an entire</p> <p>3 bottle, to an entire line of products over decades and</p> <p>4 decades. And I think that is borne out by his own results.</p> <p>5 He tests a number of bottles and he gets a number of</p> <p>6 different results across those different bottles. If his</p> <p>7 statistical extrapolation were correct, he should be getting</p> <p>8 the same concentrations across the same type of bottles, but</p> <p>9 that's not borne out by his findings.</p> <p>10 Finally, I want to argue about what we are</p> <p>11 collectively referring to as the "below the waist report."</p> <p>12 There is a report that Dr. Longo did that was based off of a</p> <p>13 plaintiff in a different case. Her name was Ms. Ratcliffe.</p> <p>14 And in that case, an investigator, and Dr. Longo's lab, did</p> <p>15 a simulation of the type of powder application that that</p> <p>16 particular plaintiff had alleged that she used. And that</p> <p>17 was a below the waist application. The investigator, it was</p> <p>18 actually a man wearing a swimsuit, pulled his swimsuit open,</p> <p>19 shakes the powder in, squeezes the powder in and then</p> <p>20 recorded the dust in the room during this investigation.</p> <p>21 And we argue that this is in a posit for this case.</p> <p>22 First of all, that is not type application Ms. Olson alleges</p> <p>23 that she used. It's not in a room that matches the types of</p> <p>24 rooms that Ms. Olson alleged that she lived in. The</p> <p>25 particular room in that experiment was made to match the</p>		<p>1 with a different application method, that none of these</p> <p>2 things make the information from the study valuable for the</p> <p>3 question in this case, which was what was Ms. Olson exposed</p> <p>4 to.</p> <p>5 And our understanding is that plaintiffs are not</p> <p>6 asking to play the associated video that was taken of this</p> <p>7 experiment, but to the extent that they are, we would argue</p> <p>8 that not only is that irrelevant, but that is also</p> <p>9 prejudicial. Because the video shows someone wearing a</p> <p>10 respirator in a room with special lighting to show all of</p> <p>11 the dust. And again, this is not someone simulating the</p> <p>12 type of application that Ms. Olson claims that she had.</p> <p>13 So for those reasons, we would ask that Dr. Longo's</p> <p>14 testimony be excluded.</p> <p>15 MR. BLOCK: Good morning, your Honor.</p> <p>16 Dr. Longo has testified in New York, in New York</p> <p>17 City asbestos litigation before about the release of</p> <p>18 asbestos from products. In Judge Mendez's summary judgment</p> <p>19 decision filed in this case on November 14th, 2018, NYSCEF</p> <p>20 Doc. Number 173, Dr. Mendez (sic) discussed Dr. Longo's</p> <p>21 opinion, knowing that Dr. Edward Longo, it's actually</p> <p>22 William Edward Longo, has a doctorate of philosophy and</p> <p>23 material science and engineering. He also studied</p> <p>24 microbiology and chemistry.</p> <p>25 Judge Mendez noted the plaintiffs provided his</p>	
Proceedings	Page 1460	Proceedings	Page 1462
<p>1 room for that particular plaintiff, but we are in a</p> <p>2 completely different situation here.</p> <p>3 And even more importantly, I think, is the sample</p> <p>4 that was used for that. So the sample that Dr. Longo chose</p> <p>5 for that experiment was M65205-001. And it is strange that</p> <p>6 Dr. Longo picked that sample, because it's 15 times higher,</p> <p>7 in terms of the contamination, recorded by Dr. Longo.</p> <p>8 Again, we are not agreeing this was -- we are not agreeing</p> <p>9 with his numbers, but even according to his own numbers and</p> <p>10 his own conclusions, it was 15 times higher than the median</p> <p>11 positive result for his testing. It was 30 times higher</p> <p>12 than the median results over all of his testing. And it was</p> <p>13 twice as many fibers per gram as all of the other samples</p> <p>14 combined. In other words, it was an outlier. But it wasn't</p> <p>15 just an outlier in terms of the potential contamination. It</p> <p>16 was also an outlier in terms of its history. It was one of</p> <p>17 the oldest bottles. It was actually from the 1940's. And</p> <p>18 Dr. Longo admitted it was 1940's bottle. It was a metal</p> <p>19 bottle with bigger holes in the top. It was a different</p> <p>20 type of bottle than the type that Ms. Olson would have used.</p> <p>21 And Ms. Olson wasn't even alive in the 1940's.</p> <p>22 So this is not a good example of the type of bottle</p> <p>23 that she would have been using when she was dusting herself</p> <p>24 throughout her adult life. And we think that besides that</p> <p>25 this is an outlier sample with a potentially different room,</p>		<p>1 deposition testimony in an asbestos case involving other</p> <p>2 plaintiffs in California. His report dated August 2nd, 2017</p> <p>3 and the "below the waist application" of JJBP's report.</p> <p>4 Dr. Longo performed studies and samples of defendant's</p> <p>5 products and reviewed other reports and studies. Most were</p> <p>6 annexed to the opposition papers and concluded that there is</p> <p>7 asbestos in the talc found in defendant's product.</p> <p>8 Judge Mendez goes on to state Dr. Longo's "below</p> <p>9 the waist application" of JJBP report further quantifies the</p> <p>10 amount of asbestos exposure from the use, and Judge Mendez</p> <p>11 goes on to say that the mean fiber concentration was 2.57</p> <p>12 asbestos fibers per cc in the air samples for the breathing</p> <p>13 area.</p> <p>14 Judge Mendez goes on to say the combined evidence</p> <p>15 from Dr. Longo raised an issue of fact as to causation, and</p> <p>16 so I wanted to mention that.</p> <p>17 Now as to Dr. Longo's methodology, Dr. Longo's</p> <p>18 methodology in identifying asbestos relies upon consensus</p> <p>19 government standards. And also Dr. Longo has published -- I</p> <p>20 have it on the screen here. Dr. Longo is published in the</p> <p>21 peer-reviewed literature on the identification of asbestos</p> <p>22 in materials. He is authored an ASTM standard method that</p> <p>23 includes the identification of asbestos.</p> <p>24 Dr. Longo has been hired by the City of New York</p> <p>25 and State of New York to identify asbestos in the same way</p>	

Proceedings	Page 1463	Page 1465
<p>1 in which he will identify asbestos in this case.</p> <p>2 Dr. Longo has published in the peer-reviewed</p> <p>3 literature regarding the identification --</p> <p>4 THE COURT: Did anyone seek a Frye hearing? I'm</p> <p>5 not saying that anyone should have. I'm asking whether</p> <p>6 anyone --</p> <p>7 MR. BLOCK: Your Honor, regardless -- do you want</p> <p>8 an answer to that question, first?</p> <p>9 MS. RAY: Your Honor, I believe that to the extent</p> <p>10 that the Court considers his methodology novel, defendants</p> <p>11 did ask for a Frye hearing, according to their written</p> <p>12 motion in limine. It's footnote five.</p> <p>13 THE COURT: Thank you.</p> <p>14 MR. BLOCK: And Dr. Longo's methodology is not</p> <p>15 novel. He applied, in preparing the samples, he used</p> <p>16 Dr. Blount's method from the peer-review literature using</p> <p>17 heavy liquid separation to prepare the samples for analysis.</p> <p>18 That is also discussed in the ISO method 22262-2.</p> <p>19 Dr. Longo used a concentration method, heavy liquid</p> <p>20 separation method that Johnson & Johnson's own consultants</p> <p>21 in 1970s said was mandatory in order to identify asbestos in</p> <p>22 talc.</p> <p>23 Dr. Longo counted asbestos pursuant to the EPA's</p> <p>24 protocol. Dr. Longo, in conducting the tests, your Honor,</p> <p>25 Dr. Longo tested two categories of products. One group were</p>	<p>1 fibers that were greater than five to one. Johnson &</p> <p>2 Johnson, in their own all raw material specification,</p> <p>3 Exhibit 2 in this case, your Honor, look how Johnson &</p> <p>4 Johnson defines asbestos. Right there. "Asbestos is</p> <p>5 chrysotile. And it's the fibrous forms of tremolite</p> <p>6 actinolite and anthophyllite.</p> <p>7 Dr. Longo found fibrous forms of anthophyllite</p> <p>8 tremolite and actinolite in Johnson's Baby Powder, which</p> <p>9 meets even Johnson & Johnson's own standard that they use</p> <p>10 out of court when they are not defending lawsuits.</p> <p>11 Dr. Longo's identification of asbestos in the</p> <p>12 product is also consistent with many standards ISO/ASTM.</p> <p>13 (Continued on the next page.)</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	
Proceedings	Page 1464	Page 1466
<p>1 products that were provided to him by plaintiffs law firms</p> <p>2 that had obtained them from clients and from the internet,</p> <p>3 and provided various documentation of where they got the</p> <p>4 products. So what Dr. Longo did, your Honor, was he tested</p> <p>5 those products. He found asbestos this those products. He</p> <p>6 used a methodology of showing the asbestos from the electron</p> <p>7 microscope. He confirmed the chemistry of the asbestos</p> <p>8 through standards, through the S analysis. He confirmed the</p> <p>9 crystalline structure of the asbestos through SAED analysis.</p> <p>10 He compared the asbestos he found in the Johnson &</p> <p>11 Johnson products to known standards that allowed Dr. Longo</p> <p>12 to compare the asbestos he found in the baby powder with</p> <p>13 National Institute of Standards and Technology, um, samples</p> <p>14 that show exactly what it's supposed to look like. And your</p> <p>15 Honor, Dr. Longo will testify that what he counted as</p> <p>16 asbestos in the Johnson Baby Powder, is asbestos, and it's</p> <p>17 asbestos under all of the standard methodology for</p> <p>18 Transmission Electron Microscopy, and he'll talk about those</p> <p>19 standards, including the EPA.</p> <p>20 And also, your Honor, under Johnson & Johnson's own</p> <p>21 definition, all right, you just heard Counsel talk about --</p> <p>22 they want to talk about how the asbestos grew billions of</p> <p>23 years ago. Look at their own methodology. If it's greater</p> <p>24 than three to one, it's a fiber.</p> <p>25 Dr. Longo was more conservative. He only counted</p>	<p>1 PROCEEDINGS</p> <p>2 MR. BLOCK: Your Honor -- your Honor, as to</p> <p>3 the samples, the 30 samples that came from the</p> <p>4 plaintiffs' law firm, Dr. Longo took steps to confirm</p> <p>5 that there is no tampering. You know what, your</p> <p>6 Honor. You can't remove the top off a plastic bottle</p> <p>7 of Johnson's Baby Powder. You can't remove it</p> <p>8 without damaging the top. You literally have to take</p> <p>9 a screwdriver and pry it off, which will show damage</p> <p>10 to the --</p> <p>11 THE COURT: I have not done that ever.</p> <p>12 MR. BLOCK: Right. But here's the key thing,</p> <p>13 your Honor. It will show the damage. So, Dr. Longo</p> <p>14 examined the containers and found no such evidence,</p> <p>15 no such damage. Furthermore, you know what Dr. Longo</p> <p>16 did? He went and bought some Johnson's Baby Powder</p> <p>17 off the shelf, and he compared a particle size of the</p> <p>18 talc in the samples, with the samples he tested, and</p> <p>19 he found that it was consistent. Also here is a key</p> <p>20 thing we didn't here from Johnson & Johnson. Dr.</p> <p>21 Longo then, he wasn't able to get this before, but he</p> <p>22 was then able to get samples from Johnson & Johnson</p> <p>23 that they had preserved and kept in their Johnson &</p> <p>24 Johnson museum for posterity. He tested their</p> <p>25 samples. And he posed the scientific question, is</p> <p>26 his results of their samples consistent with the</p>	

Page 1467

1 PROCEEDINGS
2 results of the samples that came from the law firm.
3 And the answer is yes. It contains similar
4 concentrations of asbestos. And the asbestos -- the
5 asbestos looks similar and the pictures look similar.
6 The chemistry is the same. Your Honor Dr. Longo's
7 testing is consistent with testing from -- from the
8 peer-reviewed literature that shows tremolite
9 asbestos in talc including from Dr. Blount.
10 Dr. Longo charted the size of the asbestos he
11 found in samples compared to the NIST known tremolite
12 standard. Compared to Dr. Blount compared to a
13 published article by Campbell.
14 So, your Honor, the issues that are raised by
15 Johnson & Johnson go to the weight of the evidence.
16 As to the below the waist study -- Well, as to
17 extrapolation, your Honor, he only test a tiny amount
18 of powder from each container. And it is a standard
19 methodology among all TEM labs, even among the
20 defense experts when they find amphibole particles.
21 That you -- that you take what you found and then you
22 are able to say that that is so many fibers per gram
23 and that goes to cross examination. They will raise
24 the issue well, you actually only tested this much.
25 I will lay the foundation with Dr. Longo as to
26 determining fibers per gram based upon testing a

Page 1468

1 PROCEEDINGS
2 small amount, this TEM small amount.
3 As to below the waist study, your Honor,
4 applying Johnson's Baby Powder in the crotch area,
5 okay, that's one of the common uses. It's marketed
6 as such to prevent chafing. And a key point here is
7 Dr. Longo -- that test followed a peer-review
8 methodology. It occurred in what's called an
9 exposure simulation chamber. Dr. Longo published it
10 in the peer-review literature about the testing of
11 asbestos-containing products in that exposure
12 simulation chamber. The person in the chamber is
13 always protected. Here Dr. Longo was testing a
14 product that was known to contain asbestos based upon
15 his testing. And how much was used in the study?
16 Four grams. How much is Johnson & Johnson in their
17 historical documents say is normally applied when
18 talcum powder is applied to the body? About four
19 grams. So, the amount used in the below the waist
20 studies is consistent with documents where Johnson &
21 Johnson did usage studies of customers, and they said
22 about four grams, five, in fact sometimes six grams,
23 sometimes eight grams. Dr. Longo's testing on that
24 was conservative.
25 Mrs. Olson, her use of it was all over her
26 body and closer to her breathing zone. So, to the

Page 1469

1 PROCEEDINGS
2 extent they claim there is some issue that the
3 testing applied below the waist, the key point, your
4 Honor, is what's getting up in the air. There are
5 issues on that which will go to the weight of the
6 evidence as well.
7 Also Dr. Longo, the container he used had
8 similar concentrations of asbestos as a study in the
9 peer-reviewed literature that found similar results
10 with respect to another brand of talcum powder that
11 also used Italian talc. This container that Dr.
12 Longo tested used Italian talc. We do not plan to
13 show the video from the examination.
14 MS. RAY: Your Honor, if I may briefly
15 respond.
16 THE COURT: Yes.
17 MS. RAY: I will not belabor the arguments
18 that I already made. But I do want to just stress
19 the exposure below the waist study used one tin. It
20 used one tin from the 1940s that came from a
21 plaintiff's firm. And why did they chose one tin
22 from 1940s? Ms. Olson wasn't using tins from the
23 1940s. She wasn't using that kind of product. Yet
24 they chose the one tin from the 1940s that had 15
25 times higher than their medium positive finding.
26 It's blatant cherry picking. For that reason we

Page 1470

1 PROCEEDINGS
2 argue that the exposure study from the below the
3 waist study is not applicable to this case.
4 THE COURT: Well --
5 MR. BLOCK: Can I respond to that, your
6 Honor? Your Honor, the container had a similar
7 concentration to asbestos as a study in the peer-
8 reviewed literature. Dr. Longo will compare results
9 of that study. That container used Italian talc,
10 okay. Whether it was a 40s or 50s container, and Dr.
11 Longo will talk about that, that container used
12 Italian talc. Donna Olson was exposed to Italian
13 talc, Johnson's Baby Power.
14 MS. RAY: Your Honor, he's trying to say a
15 peer-reviewed literature about a competitor's product
16 is providing information about Italian talc from the
17 1940s for Ms. Olson.
18 MR. BLOCK: No, that's not true.
19 THE COURT: Folks. Folks. Thank you
20 everyone. I think the Court understands. Jury will
21 be told that, assuming that this witness is qualified
22 as an expert witness, that when a case involves a
23 matter of science or art or requires a special skill
24 or special knowledge, which most people don't have,
25 but some qualified witnesses do, those are expert
26 witnesses, and they are permitted to state their

Page 1471

1 PROCEEDINGS
2 opinions over which they have obtained knowledge.
3 And that the jurors can accept those opinions or they
4 can reject those opinions or they can accept those
5 opinions that they wish to accept and reject those
6 opinions they, after careful consideration of all the
7 evidence, including cross examination, that the
8 opinions are -- are not persuasive. And everything
9 that I've heard so far is -- is argument about the
10 witness' qualifications. I want to hear what the
11 witness' qualifications are.
12 In the event that anybody asks me to find
13 that the witness is an expert witness, if you want me
14 to give an instruction to the jury immediately upon
15 my finding, I'm happy to do so. As often is the
16 style in New York State Court, but it's not the
17 style, as I understand it, in Federal Court. We just
18 continue. But everything else is a matter for the
19 jury. It goes to the weight of the evidence, and
20 it's not something that the Court can exclude a
21 witness even for hearing the witness.
22 And so, let us bring -- The motion is denied.
23 The doctor can testify. We'll take it from there.
24 Let's bring down the citizens in the correct order.
25 More news. Juror number three told Officer
26 Huie that her grandmother's on her death bed sadly

Page 1472

1 PROCEEDINGS
2 and at some point she will have to attend the
3 funeral. We don't know when. The grandmother, when
4 that -- obviously we don't know when that will take
5 place. But I'm just going to tell her that we'll
6 accommodate her.
7 There also is an issue with one of the other
8 jurors. I don't think I know which one or I forgot
9 which one, but there is a juror who needs to take off
10 part of Friday.
11 COURT OFFICER: Yes, Friday afternoon.
12 THE COURT: This Friday afternoon.
13 COURT OFFICER: This Friday afternoon.
14 MR. BLOCK: We're off Friday afternoon. We
15 discussed it.
16 THE COURT: Yes. Perfect. Okay. Let's
17 bring them down.
18 COURT OFFICER: All rise. Jury entering.
19 (Whereupon the jury panel entered the
20 courtroom.)
21 THE COURT: Thank you so much. Please be
22 seated everyone. We hope that you had a wonderful
23 weekend. We will continue with the trial in just a
24 moment. Let me tell you that we have shuffled the
25 jurors. Perhaps the jurors will be in a position,
26 all of you, that you could better hear the witness

Page 1473

1 PROCEEDINGS
2 now that we have done so, because the acoustics in
3 this courtroom are very poor. Otherwise these are
4 things that happen from time to time in a trial.
5 You're not to wonder about it or worry about it.
6 Don't even think about it.
7 The next thing is that a juror told Officer
8 Huie last week about a problem or something that the
9 juror has to do I think this Friday afternoon.
10 JUROR: That was me, your Honor.
11 THE COURT: We will be off this Friday
12 afternoon. So we're able to accommodate you. We're
13 happy to do that, sir.
14 JUROR: Thank you, sir.
15 THE COURT: Thank you. And another juror has
16 an issue about the health of a relative, and
17 unfortunately that the juror might have to miss at
18 least a little bit of court because of the relative's
19 bad health. And we will accommodate that juror. We
20 will accommodate all of you. You are our first
21 priority.
22 Next witness.
23 MR. BLOCK: Yes, your Honor. The plaintiff
24 calls Dr. William Longo.
25 COURT CLERK: Raise your right hand.
26 W I L L I A M L O N G P h D., after having been duly

Page 1474

1 Direct-Longo-Block
2 sworn by the court clerk, was examined and testified as
3 follows:
4 COURT CLERK: Please be seated.
5 THE WITNESS: Thank you.
6 COURT CLERK: In a loud, clear voice state
7 your full name and address for the Court.
8 THE WITNESS: William Longo, 3945 Lakefield
9 Court, Suwanee, Georgia, 30024.
10 COURT CLERK: Thank you.
11 THE COURT: You may inquire.
12 DIRECT EXAMINATION
13 BY MR. BLOCK:
14 Q. Dr. Longo, good morning.
15 A. Good morning.
16 Q. Can you introduce yourself to the jury and
17 tell the jury what area of science you specialize in?
18 A. My name is Bill Longo. I live in Cumming,
19 Georgia which is just one of the many suburbs that line
20 Atlanta. My area is material science and engineering
21 coupled with industrial hygiene.
22 Q. All right. So, what is material science?
23 What is that scientific field?
24 A. Quite simply it's the study of materials that
25 are defined usually about five different ways. You have
26 your metals or metallurgy, polymers or plastics, ceramics

1 Direct-Longo-Block
2 or minerals, in this case we're dealing with asbestos and
3 talc, then you have what are composites, where they will
4 put --
5 THE COURT: We need you to speak up, sir.
6 THE WITNESS: Sorry, your Honor.
7 THE COURT: It's not your fault. It's the
8 acoustics in the courtroom are poor.
9 THE WITNESS: I tend to get low at times.
10 I'll try my best.
11 THE COURT: Thank you.
12 A. So you might mix a polymer with say an
13 aluminum material. I saw ad recently for new types of
14 standalone bathtubs that are using this kind of composite.
15 And the last part is what I spend a lot of time in
16 graduate school is biomaterials. Things implanted into
17 the body, such as an artificial knee or interocular lens
18 if you get a cataract. As material scientists, we learn
19 all the different characteristics of the materials, its
20 strengths, its weaknesses for all of these different
21 types. Where you can use them. Where you don't use them.
22 And then how to develop new materials. If you're old as
23 me, you can remember when soda cans or beer cans came in a
24 steel can with a seam down the side and had a top and
25 bottom that you could actually see. It was a material
26 scientist that came up with an aluminum copper alloyed

1 Direct-Longo-Block
2 that made that lighter, faster, less energy to make. The
3 ceramic heat shields on the Space Shuttle, material
4 scientists developed that.
5 THE COURT: Material scientists -- I'm sorry?
6 THE WITNESS: Developed -- The heat shields
7 on the Space Shuttle, that was a new type of ceramic.
8 All your semiconductor advances getting smaller and
9 new exotic materials is all material scientists.
10 The last part is how to understand how a
11 material, when it's all made, if something goes
12 wrong, what happened. So, we do a lot of forensic
13 engineering like okay. Say this scale, somehow there
14 is some corrosion starting on it, that's happening
15 over and over. A material scientist could go in and
16 say okay. Did you have the right material there.
17 Some acid got on it, so on and so forth.
18 Material scientist are usually involved in
19 things like, is the go between all the different
20 engineering groups. Your civil engineering, your
21 mechanical engineer. They are putting together to
22 replace a bridge. They will get a material scientist
23 in there, like okay, what's the best concrete. The
24 new type of metal alloys. What kind of coatings.
25 So, I like to say material scientists know a
26 little bit about a lot of stuff in the engineering

1 Direct-Longo-Block
2 field. When it comes to what material to use, they
3 usually go to material science and engineering.
4 Q. Can you tell us about your educational back-
5 ground starting from college?
6 A. Received a Bachelor's of science in
7 microbiology. I went on to and applied and got into
8 graduate school in material science and engineering. I
9 received a master's of science and material science in
10 engineering and stayed in that department and received my
11 Ph.D. or doctorate in material science and engineering.
12 Graduating finally in 1983 I believe it was.
13 Q. And at some point did you get involved in
14 analyzing materials under the microscope?
15 A. Yes. Literally my whole career, but starting
16 in graduate school. When our professor would get
17 consulting projects, where materials had failed, plus in
18 graduate school material science in engineering, you learn
19 how to run and analyze stuff with all the scientific
20 acronyms that scientists like. So, everything from
21 optical microscopy to transmission electron microscopy,
22 the scanning electron microscopy, gas chromatographs, mass
23 specs, you name it, we were able to use it in our research
24 when you're getting your Ph.D. to use how to understand
25 strengths, weaknesses. So, as a nerd you love all these
26 different tools, we call them tools, that analyze stuff.

1 Direct-Longo-Block
2 Q. Here we have the initials MAS. Can you tell
3 us about your company and when you started it and how it
4 got started?
5 A. It stands for Materials Analytical Services,
6 but everybody calls it MAS. We opened the doors of MAS in
7 February of 1988 with two employees. Over the years it
8 grew to about a hundred employees with analytical
9 laboratories in Atlanta, Raleigh, North Carolina, Phoenix,
10 San Jose and we had offices also in Los Angeles and
11 Washington, D.C. As it turns out, all those labs, they
12 specialize in semiconductors. So, we diversified in that
13 in 2006. Now we have just the Suwanee laboratory. It's
14 20,000 square feet and we have 41 employees.
15 Q. Can you tell the jury what type of science
16 professionals you have working for you at Material
17 Analytical Services?
18 A. We have other material scientists like
19 myself. We also have an inorganic chemist, organic
20 chemist, physicists, optical microscopists that specialize
21 just in that, transmission electron microscopists,
22 scanning electron microscopists, geologist, mineralogist,
23 biologist, microbiologist. I don't want to leave anybody
24 out. I think that pretty much covers it.
25 Q. When did you first get involved with testing
26 materials to determine if they contain asbestos, and if

Page 1479

1 Direct-Longo-Block
2 so, what kind of asbestos was in the materials?
3 A. When I started my first little company in
4 Gainesville Florida called -- My God it's been so long --
5 Micro Laboratories I believe it is.
6 Q. Okay. What year was that when you first
7 started analyzing materials for asbestos?
8 A. Let's see. I graduated in I think it was
9 October of 1983. And I started that company in around
10 September of 1983.
11 Q. All right. Let me show you what's been
12 marked as Plaintiffs' Exhibit 310-A. Dr. Longo, is that
13 the most recent version of your CV?
14 A. (Examining). Yes, sir, it is.
15 MR. BLOCK: Plaintiff moves Exhibit 310-A
16 into evidence.
17 MR. BROCK: No objection.
18 THE COURT: It's admitted.
19 (Whereupon Plaintiffs' Exhibit 310-A was
20 deemed marked received in evidence as of this date.)
21 Q. So, Dr. Longo, how long then have you been
22 testing materials for the presence of asbestos?
23 A. Commercially since approximately 1984 we
24 were, 1985 we were one of the first analytical
25 laboratories in the country that was analyzing asbestos on
26 air filters by transmission electron microscopy. So, over

Page 1480

1 Direct-Longo-Block
2 32 --
3 Q. Thirty-five years now.
4 A. Thirty-five years now. God, time flies.
5 Q. Dr. Longo, can you tell the jury about any
6 work that you've done with the EPA on the issue of
7 asbestos?
8 A. Initially I was one of the scientists that
9 was on -- EPA called it their blue ribbon panel for
10 developing methods for analyzing asbestos back in the late
11 1980s, early 1990s. And a method is really nothing more
12 than a recipe where you start at A and when you get to Z
13 you have a result. Methods are important, because you
14 want to standardize them. If Lab A is analyzing asbestos
15 using a method, and Lab B analyzes asbestos using some
16 different method, Lab A and Lab B can't compare their
17 results. So, you want a standardized method. So, if Lab
18 A uses a method that has been standardized and B uses a
19 method and Lab C does, we all understand what the results
20 are.
21 So, we were doing -- we were putting together
22 methods to -- for EPA to analyze asbestos in settled dust
23 samples in buildings that contain asbestos products.
24 Q. And over what time period were you involved
25 in this EPA peer-review group for the asbestos engineering
26 program?

Page 1481

1 Direct-Longo-Block
2 A. Well, that was a different group. And that
3 was four scientists that met with the EPA in Cincinnati.
4 And again those were in the -- I think the early 1990s.
5 We would go every six months and look what EPA was doing
6 in their research on asbestos issues. So, we would try to
7 give them guidance, what we see outside of EPA and what
8 was needed, and try to put them in directions that was
9 good for the deal with the asbestos problem at the time.
10 We would look over their research, it would be peer
11 reviews for their research. We would make recommendations
12 on where they needed to go for the next stage. We did
13 that ever six months for about five years.
14 Q. And how many people were asked to do that by
15 the EPA?
16 A. There were four of us.
17 Q. How about the AIHA, what is that group and
18 what work have you done with that group relating to
19 asbestos?
20 A. American Industrial Hygiene Association. And
21 it is a group that does a couple of things. It -- In
22 order to become a certified industrial hygienist, you have
23 to go through the AIHA and take their test and meet their
24 qualifications. They constantly are providing an avenue
25 for new research to get industrial hygienists more
26 involved. And really an industrial hygienist is somebody

Page 1482

1 Direct-Longo-Block
2 who can go into an industrial site and have the knowledge
3 and the whereabouts to say all right. I think this could
4 be a problem. First one is anticipation of a problem.
5 I'm going to use an extreme case. Walk in and it's a
6 manufacturer making carburetor cleaner. And Carburetor
7 cleaner uses solvents. The solvents have a particular
8 smell. So, say he walks in or she walks in and says I can
9 smell organic compounds. There must be a leak somewhere
10 in here. So, the second part of an industrial hygienist
11 is to take measurements. To figure out yes, there is a
12 leak. Then they must be able to remediate that leak.
13 Okay. You got to change this gasket. You got to have
14 more ventilation in this hood to get the fumes out. Then
15 you train so it doesn't happen again. So, that's what an
16 industrial hygienist does.
17 Q. Okay. And are you certified as an industrial
18 hygienist?
19 A. No, sir, I'm not.
20 Q. Have you had certified industrial hygienists
21 work for you at MAS?
22 A. Yes, and they still do.
23 Q. Okay. And have you corroborated with
24 certified industrial hygienists in publishing articles in
25 the peer-review literature?
26 A. Yes, a number of my articles have been

<p style="text-align: right;">Page 1483</p> <p>1 Direct-Longo-Block 2 published in industrial hygiene journals. I have been 3 asked to teach at the AIHA conferences a year to help 4 certified industrial hygienists understand how to use the 5 electron microscope to solve industrial hygiene problems 6 including asbestos. Industrial hygienists are like 7 attorneys in that you have to take continuing education 8 courses and get your points. Certified industrial 9 hygienists also have to take continuing education courses 10 at these conferences. I've been invited to teach there at 11 times. Even though I'm a material scientist, I've spent a 12 lot of my career involved in industrial hygiene, in 13 hygiene issues with asbestos exposure. 14 (Continue on the next page.) 15 16 17 18 19 20 21 22 23 24 25 26</p>	<p style="text-align: right;">Page 1485</p> <p>Dr. Longo - Plaintiff - Direct (Mr. Block)</p> <p>1 developing methods for testing asbestos. 2 Q And did you -- were you involved in authoring or 3 creating a standard for the testing of asbestos that was adopted 4 by the ASTM? 5 A Yes. I was in charge of putting the protocol together. 6 It was the D-2205 Committee. And it was called -- we had 7 developed for EPA, but now I was -- have to say it's the entire 8 entity protocol. Yes, I didn't realize what it was going to 9 take to get in the subcommittee, 125 scientists, and other 10 interested parties, to come to an agreement on a 30-page 11 document. 12 Q Did you ultimately do that? 13 A It took six years. I swore I would never do another 14 one, but it is the most peer-reviewed and scrutinized method 15 that anybody developed. Besides your committee it goes to the 16 full committee, so you may have 2,000 scientists looking at it. 17 And any one negative vote can send it back to the drawing board. 18 And then it goes out to the entire committee, the entire ASTM, 19 which is 40,000 people. So they are very rigorous on their peer 20 review. 21 Q So I want to ask about some groups or entities that 22 you've done consulting work for on issues related to asbestos. 23 And since we are in New York City, I want to start with New York 24 City. 25 What type of work have you been hired to do for New</p>
<p>Dr. Longo - Plaintiff - Direct (Mr. Block)</p> <p style="text-align: right;">Page 1484</p> <p>1 Q And we'll get into it more, but have you taken 2 industrial hygiene measurements of asbestos in the air? 3 A I have in. 4 Q Have you published articles in the peer-reviewed 5 literature about that? 6 A Yes, I have. 7 Q What is the ASTM, and what sort of work have you done 8 with the ASTM on asbestos over the years? 9 A ASTM is the American Society for Testing Materials. 10 It's now known as the International Society of Testing 11 Materials. It is the largest standards organization for making 12 -- for generating methods in the world. 13 So ASTM generates standard methods. Again, these are 14 the recipes that do something and make it a standard so 15 everybody else will do it. They make standards from everything 16 from -- if you are a manufacturing cabinets that go in a 17 kitchen, there is an ASTM standard for how many times that door 18 should open and close before something goes wrong. 19 There are standards for concrete. It is used in every 20 building in the country now, where the architect or the engineer 21 will say, you have to use ASTM standard -- and I don't know the 22 concrete standard, but I'll makeup the number, you know, E5432, 23 and then the person building the building should know to use 24 that. 25 My area was in the -- a committee that specifically was</p>	<p>Dr. Longo - Plaintiff - Direct (Mr. Block)</p> <p style="text-align: right;">Page 1486</p> <p>1 York City related to asbestos? 2 A New York City hired me -- that's been a while -- to 3 help them figure out in a lot of their buildings who 4 manufactured the asbestos products in the building. Say, for 5 example, if a high-rise had asbestos-containing fireproofing in 6 it that had maybe been put in there ten, 15, 20 years before 7 that, it doesn't have any labels on it anymore. So they wanted 8 to determine if we could take those samples and reverse engineer 9 forensically, determine the ingredients in them. Say, for 10 example, if it's a fireproofing that has chrysotile asbestos, 11 ten percent, 35 percent vermiculite, Libby, Montana vermiculite, 12 and gypsum, with no starch. Well only one manufacturer in the 13 world made that that's W.R. Grace. The product is MANA code 3. 14 Getting their formulations of what they said they put 15 it in and comparing for all the formulations of the known 16 manufacturers, we were able to come up with a way to tell the 17 difference between that and say fire code V, type D, made by 18 U.S. Gypsum, which had ten percent chrysotile, 35 percent 19 vermiculite, 55 percent gypsum, and one percent starch to get 20 past the MANA Code W.R. Grace patent. 21 Q So is this litigation for New York City was suing the 22 manufacturer, the manufacturers of the products that were in 23 place in certain parts of New York City buildings? 24 A Yes. The asbestos fireproofing, the acoustical 25 plaster, the surface texture materials. And over time we were</p>

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1487

1 able to essentially determine that every one of these
2 manufacturers had a fingerprint that distinguished it from one
3 to another to another, who made basically the exact same thing,
4 because they are all engineered to do the same thing.

5 Q So New York City, they had to hire an expert to
6 determine whether the material in the buildings contained
7 asbestos and also to determine, based upon the other
8 ingredients, who made that asbestos, and you did that work for
9 New York City?

10 A Yes, I didn't do the first part. After they determined
11 it was asbestos, then they would send it to our lab and we would
12 reverse engineer it and determine who made it. And sometimes we
13 could get down to the actual plant it was made in and what years
14 it was made in, because they would change the formulations
15 slightly over time.

16 Q Did you do some sampling yourself in New York City at
17 large buildings, back when they were standing, including the
18 Twin Towers, World Trade Center?

19 A Yes. The Twin Towers or the Port Authority of New York
20 and New Jersey, we were doing the exact same thing for them.
21 And we, myself and an industrial hygienist, geologist that
22 worked for me, went to the World Trade Center to sample both
23 samples from inside the elevator shaft that had 25 percent US
24 mineral sound shield, and the first 31 floors, somewhat had been
25 abated of Tower One before they stopped using sprayed on

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1488

1 asbestos fireproofing.

2 Q So this asbestos, it's not in the elevators; right?

3 A No.

4 Q So how would you when -- you went up to the upper
5 floors and you were sampling for the asbestos, how would you
6 sample for it?

7 A I get that little hatch on the top of the elevator, of
8 course with Port Authority's people, and get on top of the
9 elevator, because it was inside the actual shafts, and then move
10 the elevator and you could look up. It was pretty daunting.

11 Q So you would get up there over the elevator shaft, the
12 elevator stopped, take a sample and then analyze it in your lab?

13 A Correct.

14 Q So how about the State of New York. Did you do similar
15 work for the State of New York?

16 A We did for the State of New York, as well as other
17 states, um, school districts, public buildings from around the
18 country, once we kind of cracked the forensic code.

19 Q How about some of these government agencies like the
20 Center for Disease Control, the National Institutes of Health,
21 have you done work with those federal government agencies on
22 asbestos?

23 A The Center for Disease Control and National Institutes
24 of Health did have to do with asbestos.

25 Q Tell us what work you did related to other material

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1489

1 scientific --

2 A It's microscopy issues. Center for Disease Control
3 wanted us to image the samples they had of Ebola virus, because
4 we had one of the better high resolution scanning electron
5 microscopes. The National Institutes of Health, it was a
6 contract that we received. They wanted to image, and this was
7 back in the early days of the AIDS epidemic. And they wanted to
8 look to see if human sperm -- actually, the AIDS virus was
9 attached to it and it was as a mode of transportation for
10 infection.

11 We also did work with similar groups and had to do with
12 looking at microvilli in the intestines for these types of
13 supplement products when people need to get a lot of calories.
14 And they were looking at how they artificially caused the
15 microvilli that absorbs the nutrients to kind of expand to make
16 it easier for nutrients to get in there. And they would
17 volunteers to come in to take samples of the microvilli in the
18 small intestines. I would not do that.

19 Q How about our space program NASA? Have you done
20 scientific work for them?

21 A Yes. We -- our lab in Raleigh had some instruments
22 that were able to drill microscopic holes, very precisely, using
23 a focused ion beam in their x-ray telescope that they shot up a
24 few years ago. It needed to have an area perforated with
25 micrometer sized holes in a perfect pattern to collect the

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1490

1 signal that was coming in for the x-ray telescope. So that was
2 kind of a fun project.

3 Q And is this a corporation, Dow?

4 A Dow. We were asked in one of the bankruptcies for one
5 of the asbestos manufacturers, Dow, I believe it was -- no, it
6 was Union Carbide. Union Carbide asked us to identify --
7 because we were the referee lab for people who said your product
8 is in my building -- and they had -- we had to be the referee
9 lab for all these different manufacturers who were making
10 asbestos-containing materials. And Dow was just a typical
11 consultant that -- outside of asbestos where we do lots of other
12 things. I can't remember exactly and probably can't talk about
13 it.

14 Q Okay.

15 How about the Air Force? Any scientific work for the
16 air force or armed service?

17 A The air force was to do some microsurgery on some very
18 specialized chips, and the chips had redundancy in them where
19 they were going in case one area failed. And one part of the
20 redundancy on the chip was bad. So they wanted to bypass it
21 like little -- put jumper cables on it. So we had developed a
22 technique in our Raleigh lab where we could subber (phonetic)
23 the connection. So basically you are pulling the plug out and
24 you want to put it in a different plug. And then we were -- we
25 developed a way to take a platinum gas and polymerize it right

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1491

1 where we wanted the jumper cable on a microscopic level so the
2 circuit could be completed right around it. So that was another
3 interesting project.

4 Q Can you tell the jury about certifications that your
5 lab has, and just generally what is the importance of
6 laboratories being certified?

7 A So we are certified for asbestos analysis, both the
8 American Industrial Hygiene Association, as well as what is
9 known as the National Voluntary Laboratory Accreditation
10 Program, which is essentially run by the National Institutes of
11 Standards and Technology. Probably Dr. Webber talked a lot
12 about it because he was one of the assessors.

13 What it does is, when you say you are following certain
14 methods and people are hiring you and they say okay, you are
15 going to use the AHERA method, the Asbestos Hazard Emergency
16 Response Act, and you are analyzing air samples by TEM and you
17 say yes, I'm following this, all the rules and the method, well,
18 you better be.

19 So they have assessors come in once a year, once every
20 two years and look over your program, look at your reports, make
21 sure when you say I'm following AHERA, TEM analysis for air
22 samples that you are following the rules.

23 They come in and make sure the lab technicians are the
24 technicians that are doing the work and actually identify
25 asbestos. They bring in standards. They look through your QC.

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1492

1 It's usually about a week they are in your laboratory. They'll
2 tell you ahead of time and you get everything set up. The
3 American Industrial Hygiene Association, same thing for -- we
4 are certified for counting asbestos on air filters, and then a
5 whole bunch of organic chemistry and inorganic chemistry.

6 We are also ISO certified, International Standards
7 Organization Certification for Quality Control. And all these
8 analysis. And also we are certified by ISO to certify other
9 folks for the types of testing they are doing for BOC testing.
10 And then we have an FDA lab number. And that is the most
11 interesting audits of all of them.

12 Q How do you get an FDA lab number? How do you get that
13 certification?

14 A It's not a certification.

15 Q Okay. So what is it?

16 A You have to put into FDA all your quality control
17 experience, everything you are doing. And they look through all
18 the paperwork and then they give you a number. But what's
19 different about FDA than the rest of them, do you -- when you
20 have an FDA audit, you know when you find out?

21 Q When is that?

22 A When they are sitting in your lobby. The call I got AT
23 8:15 last November and they said, Bill, there's two FDA agents
24 sitting in the lobby ready for your audit. It is the most
25 comprehensive audit I've ever seen of anybody. I mean every

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1493

1 drawer is looked at. They even looked in the trash cans to see
2 if the analysts were throwing any data away. It was extensive,
3 so.

4 Q Over the years when you've obtained these
5 certifications and these inspectors come to your lab and looked
6 at the way you analyzed asbestos, how has your lab fared with
7 that.

8 A Well, we've always kept or accreditation. The last
9 NVLAP, we didn't have one check mark for doing something.
10 Usually they'll find something. Well, you need to do it this
11 way, or, you know, that -- or the logo is not right that you are
12 using, type thing. So we've been successful for the last 28
13 years on our audits.

14 Q Dr. Longo, we already covered this, right, this is the
15 ASTM asbestos standard that you talked to the jury about?

16 A Yeah. That is the one I was in charge of getting
17 through the D-5755, measuring the potential for a building where
18 it has asbestos products to cause dust to get on the surface,
19 and if you own that building and you have a program to deal with
20 that, with you want to know how much contamination that's on
21 that surface and that -- of asbestos, and that would tell you
22 how you have to deal with that.

23 Q Did that standard include how you identify something as
24 asbestos?

25 A Yes. The standards will tell you how to collect the

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1494

1 sample. In this case it's called a micro vacuum, where it's an
2 air cassette set up like a vacuum where you go over -- you map
3 out an area (indicating). Say this is five by five centimeters,
4 five by five by five, and then you vacuum it. It tells you how
5 to prepare the sample. And when you get into the transmission
6 electron microscope, it's very precise to tell you what you call
7 asbestos fibers and bundles and what you do not call asbestos
8 fibers and bundles. They have strict county rules and
9 identification procedures.

10 Q And Dr. Longo, approximately how many asbestos products
11 have you tested over the years, or samples have you tested for
12 the presence of asbestos?

13 A We are probably close to 400,000 since we've opened the
14 door 30 years ago.

15 Q And can you tell the jury about the history, you've
16 talked about some of your work outside of litigation. Can you
17 tell the jury about the history of your company and performing
18 testing for asbestos products in litigation, including for New
19 York State and the other cities and states, and including
20 plaintiffs and defendants?

21 A Yes. The product that we called the Product ID. We
22 after we've developed, I'll called it again, cracked the code
23 and reversed engineering, we were hired by the state of Hawaii,
24 the State of Texas, the City of Los Angeles, the City of San
25 Francisco, of course the City of New York, the State of New

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1495

1 York, the Port Authority, Chicago School Systems, Utah, and then
2 various large buildings and school systems around the country.

3 I've also been hired by plaintiffs to do this, and I've
4 done quite a bit of it. But we've also been hired by defendants
5 where I've tested their products and do not feel that the
6 products caused significant exposure.

7 Q In fact, Dr. Longo, is it true that you have been an
8 expert for the defendant in a case against my law firm?

9 A Yes. You weren't quite as nice to me then as you are
10 today.

11 Q Okay. Did one my law partners actually take your
12 deposition in a conference room where the court reporter wrote
13 things down to challenge your opinions in that case where you
14 were testifying for the defendant?

15 A Yes, sir. And that happens a lot because I've worked
16 for law firms on behalf of -- they are plaintiffs, but if we
17 test products that defendants make and we don't feel like they
18 cause exposure, and if my clients have them in a lawsuit, I'm
19 sitting on the other side. And usually they are pretty good
20 about it.

21 Q All right.

22 And the case where -- in a case where you were an
23 expert for a defendant opposite my law firm, did that involve
24 Scotts fertilizer?

25 A It did. It involved their turf builder fertilizer,

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1497

1 product is poured into spreaders and spread out in the grass.
2 It's not a product, and it's encapsulated. It's not a product
3 that was designed to put directly onto the body as a fine
4 powder. The asbestos is vermic -- is encapsulated, and there
5 was still some there, not to the degree it was. When that
6 product is used, you can't detect it. It wasn't designed to
7 pour onto the body every day for years and years and years.
8 It's completely two different things.

9 Q Dr. Longo, have you been hired by other companies in
10 asbestos litigation to consult with them, such as General
11 Electric or others?

12 A Yes, General Electric made hair dryers, the hand-held
13 hair dryers. There was some indication as some folks felt and
14 did some tests of could it release asbestos during its use.
15 We've tested a number of them where we set it up and blow it for
16 hours and hours on a mannequin's head and take air samples and
17 never have been able to detect asbestos. We've been haired by
18 Westinghouse in current cases and a number of different
19 companies.

20 Q Okay. So in terms of your payment, do you have an
21 hourly rate that you charge as an expert in litigation?

22 A I do.

23 Q What is that hourly rate?

24 A My company would send a bill for \$550 an hour.

25 Q So when the money is paid to the company, does Material

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1496

1 where from approximately 1968, or so, to 1979, they used a
2 vermiculite that is known as Libby, Montana vermiculite. And
3 the starting ore is heavily contaminated with tremolite
4 asbestos.

5 Libby, Montana is now a Superfund site because of all
6 the contamination of processing in mining that ore, that
7 vermiculite. And it's well-known to have tremolite that's now
8 been reclassified as winchite, richterite, tremolite,
9 actinolite, which is all a type of tremolite.

10 Q So in that case, is that fertilizer product really the
11 same or different than a baby powder product?

12 A Well, two things happen here, it's the fertilizer --

13 THE COURT: Just a moment, please.

14 Q Go ahead Dr. Longo.

15 THE COURT: Thank you.

16 A The fertilizer is advertised as a time-release. So
17 they take the vermiculite and they have to clean it all off and
18 get the vines out because they are coating it with a polymer, so
19 urea formaldehyde polymer. So all the particles have a coding
20 on it, and the way it works is once it gets into the ground, the
21 bacteria start feeding on it and releasing nitrogen, so that is
22 the time-release part. So their process, they wanted to know,
23 did it reduce the amount of asbestos in it going through and
24 encapsulating, and the answer was yes.

25 How it's different from baby powder is that this

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1498

1 Analytical Services have significant expenses that go along with
2 that business?

3 A I would like it to be paid to me directly, but we have
4 40-some employees, we have a 20,000 square foot building. Um,
5 you know, employees have health insurance, Workman's Comp, the
6 electric bill, the every day feeding of a 20,000 square foot
7 facility with 41 employees, and the equipment upkeep, plus new
8 equipment, so, no, it doesn't all go to me.

9 Q From what you told us, it sounds like you have some
10 highly educated and specialized employees to pay; is that right?

11 A Yes. We have other Ph.Ds, but they are all
12 specialized, you know, various degrees, master's level geology
13 mineralogists, microbiologists, and on and on, plus the support
14 staff.

15 Q So if you look at the total amount of money that's been
16 paid to your business, Material Analytical Services, over 30
17 plus years, how much are we talking about?

18 A Um, well, I overestimated, but I said it one time on
19 the record, so I'll stick with it. For plaintiffs, in 30 years
20 we've averaged about a million dollars a year on behalf of
21 plaintiffs, for everything, not just testimony, but all the
22 testing, et cetera. So, we celebrated our 30th anniversary last
23 year, so approximately \$30 million paid to MAS over those 30
24 years.

25 Q And as you, I think, indicated to the jury, have you

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1499

1 also been paid over the years by City and State governments, by
2 government agencies and by defendants in asbestos litigation?
3 A Yes. That would include all that property damage work
4 that we did, all the analytical work for all the states and
5 cities. And everything from churches to you name it. And also
6 we charged the exact same amount when we work on behalf of
7 defendants. We don't change anything.

8 Q All right.

9 So let's talk about some of this price see state of the
10 art equipment that Material Analytical Services uses. What is
11 this picture?

12 A This is a transmission electron microscope. That's one
13 of ours. We have three exactly like that.

14 Q And can you give us a basic explanation of what a
15 transmission electron microscope is in the way hopefully we
16 could understand?

17 A Sure. It's easy.

18 Q Okay.

19 A Probably everybody --

20 Q Let's see how it goes?

21 A I'll do my best. It's easy. Everybody has looked at a
22 -- probably seen a light microscope, you seen in your doctor's
23 office, biology class or wherever. You are using light to
24 magnify what you are interested in. And so light usually is
25 coming up from the bottom of the microscope. You got a glass

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1500

1 slide there. You are imaging it. And then as it goes through
2 the glass slide, it takes the colors, in what you are looking
3 at, and trans -- then it goes through glass lenses to magnify
4 them. So, a very good tool. We have a lot of them. Polarized
5 light.

6 The first thing we ever do when we get a kind of a who
7 done it project when something is going wrong and we are trying
8 to figure it out when we get the sample, we look at it under the
9 optical microscope.

10 Now, the light is really a vibrational wave. It's like
11 this is one wave, and I'm going to exaggerate (indicating). My
12 ability to magnify things under an optical microscope depends on
13 how big or small I'm using to look at it.

14 So if my wavelength of light is this big (indicating),
15 and I want to look at a fibrous thing that is this big
16 (indicating), I can't see it because it's this is too big. It
17 can't resolve it, we call it.

18 On the other hand --

19 THE COURT: Hold on --

20 THE WITNESS: I'm sorry, your Honor.

21 THE COURT: Would you like to explain the witness's
22 width of hands and what he was holding?

23 THE WITNESS: Okay.

24 THE COURT: Or would you like to do that?

25 THE WITNESS: I'll do that, your Honor.

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1501

1 THE COURT: You have stretched your arms about two
2 feet wide and then a moment later you held a cup.

3 MR. BLOCK: First of all, thank you your Honor.

4 THE WITNESS: That's a good point.

5 Q Dr. Longo, if you are doing something with your hands
6 that you think is important for the record to reflect, then just
7 let us know. If it's something that you are just using to, you
8 know, prove a general point, we understand that as well, but so
9 you could go ahead, Dr. Longo.

10 A All right. So say my wavelength of light is two feet
11 (indicating). It's not, of course. It's in microns. So I can
12 only resolve or see things in the optical microscope that are
13 typically bigger than this wavelength of light. That's how I
14 see it.

15 Now, if I pick up this cup (indicating) and the cup is
16 maybe four inches across, and my wavelength of light is two
17 feet, I can't see that. On the other hand, the transmission
18 electron microscope, if go to the very top of that.

19 Q Here (indicating)?

20 A No.

21 Q (Indicating)?

22 A Right there. That is a cable coming in with the
23 voltage. That microscope runs on 120,000 volts. It goes down
24 to a tungsten filament, just like in lights, but better, and
25 because of that voltage, it causes electrons to start spewing

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1502

1 out of end of the tip. An electron, if my wavelength of light
2 is two feet (indicating), an electron on the tip of my finger,
3 all things being equal, I still couldn't see it. It's minutely
4 small. And so when those electrons come out, then they have a
5 charge difference. You get electrons start going down to this
6 other charge, and in that is electromagnetic lenses, uses it to
7 squeeze the electrons together almost like in a beam. And if I
8 have your little pointer, I think it would be easier.

9 (Whereupon, the pointer was handed to the witness.)

10 Q There is a laser if you press the red part. It should
11 show up there.

12 A Okay. So -- not really. Never mind.

13 MR. BROCK: It's turning red.

14 A It's not showing up on the screen.

15 MR. BLOCK: Your Honor, may Dr. Longo step off the
16 witness stand to show a few things about the transmission
17 electron microscope?

18 THE COURT: Yes, go ahead.

19 THE WITNESS: Thank you, your Honor.

20 (Whereupon, the witness stepped down from the
21 witness stand.)

22 A So the electrons are generated up here, and because of
23 this charge difference right here (indicating), it literally
24 shot down this column. And then there's lenses here
25 (indicating), electromagnetic lenses that start squeezing that

Page 1503

1 beam into a fine, almost essentially a fine beam, about maybe
2 the size of a pencil. As it gets here (indicating), this is
3 where the sample goes in. This is the transmission part of the
4 transmission electron microscope. And so it gets here, goes
5 through the sample, and if you have a fiber, a microscopic fiber
6 in this beam, electrons -- less electrons go through here
7 (indicating), on the top and around the fiber than by it. So
8 it's imaging it. Just sort of like an x-ray.

9 You take an x-ray, the bone absorbs some of the x-ray,
10 so it's reversed. It looks lighter. And then the sides of it
11 are darker. And you are doing the same thing here. Once it
12 gets out of here, you have to then spread that beam out, so you
13 have electromagnetic lenses, again, three of them, pushing it
14 out so that the image now is big enough so you could see it. If
15 you pull that off, you'll see it on the fluorescent screen.
16 (Continued on the next page.)

Page 1504

1 Direct-Longo-Block

2 A. Because you're using electrons, you can look
3 at much smaller fibers and microscopic particles. In our
4 Raleigh lab, we had one of these that -- a higher model
5 than this that you can look at magnifications up to three
6 to 6 million times. You could actually see the atom
7 lattices in some samples. So, very powerful tool. Also
8 it allows you to positively identify asbestos. This tool
9 on the side is known as EDS. You can do microchemistry on
10 the fibers. And because you're taking a beam and you're
11 going through a crystal structure, it gives you what's
12 known as defraction patterns. As the crystals cause the
13 electron beam to scatter in particular directions,
14 depending on how the crystals orientate. We can analyze
15 asbestos and positively identify it. So, a very good
16 tool.

17 Q. All right. Thank you, Dr. Longo. The jury
18 has heard a little bit about the TEM grids, the openings
19 where you're looking at the material.

20 A. Yes.

21 Q. Can you give us a sense of the size of a TEM
22 grid that you're looking at when you use a TEM microscope?

23 A. It's the sample holder. In the TEM grid you
24 have this almost 10,000 pound microscope that is almost
25 ten feet tall. The size of the sample you can put in
26 there typically is a three millimeter TEM grid that holds

Page 1505

1 Direct-Longo-Block

2 it. So, about that big (gesturing).

3 Q. Dr. Longo, is this another picture of a TEM
4 microscope at Material Analytical Services at your lab?

5 A. That is a brand new model. You can see that
6 it looks a lot different.

7 Q. Right. So we have computer screens. And how
8 much is a piece of equipment like this cost?

9 A. With everything you see there, that would
10 cost \$750,000.

11 Q. And what is, I guess, new and different about
12 this TEM versus the one you were telling the jury about?

13 A. If you go back to the previous one, you see
14 how big it is.

15 Q. Yes.

16 A. Also you'll see right in the middle where the
17 cover is, yeah, that cover is the fluorescent screen that
18 you look at and you also have binoculars that you can pull
19 in and make another ten times magnification. To either
20 side of that, to the left and the right you'll see these
21 round things. No. Too far. Too far. There you go.

22 Q. Yes.

23 A. Those are the turn to move the sample back
24 and forth. So, when you're looking at it, and you're
25 scanning the sample, you're constantly doing this. Now if
26 you go back to the other one, smaller, there is no knobs.

Page 1506

1 Direct-Longo-Block

2 You can run it by a joy stick to move the sample. Or you
3 can do a rollerball or you can -- And the only screens are
4 the computer screens. You don't look. So you can sit and
5 look at your images and do what you need to do.

6 The other thing about it is you don't have to
7 be in the dark. You can look at it in that kind of light.
8 Go back to the other one. That's a fluorescent screen on
9 the bottom of that.

10 Q. Here (indicating)?

11 A. See where -- Right in the middle. If you
12 pull that cover plate off, there is a florescent screen.
13 For me it has to be dark in order to really see that
14 florescent screen.

15 Q. Now, how long have -- how long have
16 transmission electron microscopes been around to be used
17 by scientists or industry?

18 A. The first commercial model was sold by RCA.
19 That's a 1950 RCA transmission electron microscope.
20 That's their second generation. So, the first generation
21 came out in about 1947.

22 Q. Where did you get this picture of this
23 microscope from? Was it the late 1940s?

24 A. That's actually in our conference room.

25 Q. So you have this?

26 A. Yeah. Yes, I do. If you go in the

Page 1507

1 Direct-Longo-Block
2 conference room, it sits in the corner, because it's
3 incredibly interesting.
4 Q. And in the early 1950s were there labs doing
5 transmission electron microscopy work for industry in the
6 United States?
7 A. There was.
8 Q. And was there -- was there one here in the
9 State of New York?
10 A. A very famous one. It's still a company.
11 Dr. Ernest Fullam. He used that microscope. That was his
12 microscope. And I first ran across some of his early work
13 when he was working for Lower Lard, for the Kent Micronite
14 cigarettes that they sold from 1951 to 1955 that had
15 crocidolite in the filter. One of the first filtered
16 cigarettes. He had actually taken and analyzed the smoke
17 on behalf of them and still had the original glass plates
18 with the silver nitrite on them. That's how they took the
19 pictures. We were able to develop the pictures. Later,
20 when we got involved, we found exactly what Dr. Ernest
21 Fullam found in 1954.
22 Q. In the early 1950s the tobacco company
23 Lorillard Tobacco Company actually hired Fulham Labs in
24 New York to look at their product that contained asbestos
25 under the transmission electron microscope back then?
26 A. Well, they already knew it had asbestos in

Page 1508

1 Direct-Longo-Block
2 it.
3 Q. Right.
4 A. He was looking at the smoke.
5 THE COURT: So, is that a yes?
6 THE WITNESS: That's a yes.
7 Q. More specifically did Fulham Labs use the
8 transmission electron microscope to look at whether
9 asbestos was released in the cigarette smoke?
10 A. That's correct.
11 Q. And did you end up doing your own research on
12 that topic and actually publishing on that in the peer-
13 reviewed literature?
14 A. Yes, we did.
15 Q. So tell us about, we have seen pictures of
16 the polarized light microscope the smaller microscope. I
17 want to ask you about the one we haven't seen or talked
18 much about, the scanning electron microscope. Do you have
19 that equipment in your lab as well and what does it do?
20 A. Yes, sir. That's one of our scanning
21 electron microscopes. That, instead of transmission
22 electron microscopy, where the electron beam is going
23 through the sample like an X-ray, the scanning electron
24 microscope scans over the surface and gives you almost a
25 three dimensional look at very high magnifications what
26 the surface looks like. It's not transmitting through.

Page 1509

1 Direct-Longo-Block
2 It's going over the surface. And that's a picture of a
3 tremolite fiber on the screen. And you can almost see, it
4 gives you almost a three dimensional look. We don't use
5 it that much for asbestos. It's a lot of other things.
6 It's a very important tool for characterizing microscopic
7 features on just about anything you can put in there.
8 Q. Okay. I now want to ask you about some key
9 concepts in terms of testing asbestos and talc, okay, Dr.
10 Longo?
11 A. Yes, sir.
12 Q. And did you test Johnson's Baby Powder to
13 determine if it contained asbestos?
14 A. I did.
15 Q. And in testing Johnson's Baby Powder to
16 determine if it contained asbestos, did you apply the same
17 test methodologies or the same standards that you used in
18 testing asbestos for over 30 years?
19 A. We did.
20 Q. And in identifying whether there was asbestos
21 in Johnson's Baby Powder, did you identify asbestos in the
22 same way that you did over the years performing other
23 testing, including for the City of New York and State of
24 New York?
25 A. Yes. The same types of methods that are the
26 standard methods.

Page 1510

1 Direct-Longo-Block
2 Q. Okay. So in terms of some key concepts, I
3 want to ask you about these two and ask you if we have
4 here today, did you ship up to me a few scales here to
5 demonstrate the concepts of limit of detection and the
6 sensitivity of a method?
7 A. I did.
8 MR. BLOCK: Your Honor, may I move forward --
9 THE COURT: Yes.
10 MR. BLOCK: -- to the table? Okay.
11 Q. So, let's see if we can put this over on this
12 table.
13 MR. BLOCK: May Dr. Longo get off the witness
14 stand, your Honor?
15 THE COURT: To go to you?
16 MR. BLOCK: Yes. This is a scale, and it's a
17 demonstrative that Dr. Longo brought to talk about
18 limit of detection and sensitivity of an analytical
19 tool.
20 THE COURT: Yes, the doctor may.
21 MR. BLOCK: Okay.
22 Q. So, Dr. Longo, if you could step forward and
23 we will let's see if we can actually set it here. Okay.
24 So, Dr. Longo, it's a little difficult to see. We'll put
25 it in the center here. And, Dr. Longo, you brought a
26 scale here. And the scale shows zero. That it is

Page 1511

1 Direct-Longo-Block
2 detecting zero weight on the scale. And for the record is
3 there anything on the scale?
4 A. Is there anything up my sleeve? No, there is
5 nothing on the scale.
6 Q. All right.
7 A. So, it's at zero. And limit of detection or
8 sensitivity is how much has to be there before we can find
9 it. So, if you're analyzing water for lead, the
10 concentration has to get about .001 percent before you can
11 see it. Meaning the method is sensitive now to a certain
12 concentration. That's all you can say is we found it at
13 this concentration. If the method has poor sensitivity,
14 then there has to be more and more and more before you can
15 say it's present. With microscopes it's the same thing,
16 limit of detection. So, to demonstrate, since we have a
17 bathroom scale, okay. I want to see if I can detect, you
18 know, two paperclips. No.
19 Q. All right. So, Dr. Longo --
20 A. Can I detect a box? No. So, the sensitivity
21 of the method is not designed to measure this small stuff.
22 Q. But, Dr. Longo, the scale says zero. Does
23 that mean that there is zero paperclips on the scale?
24 A. No. So, now we can, you know, 200 paperclips
25 we can see it. So that's important to understand. When
26 somebody says I didn't detect it or there was nothing in

Page 1512

1 Direct-Longo-Block
2 there, you can't say there was nothing in there or you
3 can't say there was something in there still. You can
4 only say is when I measured.
5 Q. Okay. So now it says zero?
6 A. If I'm looking around and look over here and
7 go well, there might be some paperclips on there, but my
8 method is not sensitive enough to tell me if I have a box.
9 Q. Dr. Longo, let me ask you one question here.
10 So, there is a box of paperclips on the scale that we all
11 can see. So, is that a finding of that this scale is free
12 of paperclips?
13 A. No. All you can say is I'm not measuring
14 anything on the scale. It may not be sensitive enough to
15 measure one box of paperclips.
16 Q. So, is this a non detect, a nondetectable --
17 is the result here nondetectable?
18 A. Correct. If we were analyzing for asbestos
19 using the standard methods now in talc and we don't see
20 anything, we say it's not detectable to a certain
21 detection limit. So, if I want to make my method more
22 sensitive or have a better detection limit, I prepare it
23 in a way or use a better tool that can measure it. So,
24 remember we couldn't detect three paperweights, I mean,
25 three paperclips not paperweights. If we go over to a
26 simple -- I don't know if I could get this one down. So,

Page 1513

1 Direct-Longo-Block
2 if I go to a jeweler's scale that can measure down to a
3 hundredths of a gram and I put one paperweight on it, I
4 can detect it .37 grams is one paperweight. I'm using a
5 better tool. It's my analytical sensitivity and limit of
6 detection now tells me one paperweight. I keep saying
7 paperweight. One paperclip.
8 Q. So, right now -- Was this scale more
9 sensitive?
10 A. It's more sensitive for smaller weights.
11 Q. And does this scale that is in grams, does it
12 have a lower limit of detection?
13 A. One hundredths of a gram. So, a box of
14 paperclips, say it right for the first time, is
15 42.37 grams including the cardboard.
16 Q. And we know that one box of paperclips is
17 below the limit of detection for this bathroom scale, but
18 it's able to be detected by this more sensitive scale?
19 A. Correct. That's really in a nutshell what
20 limit of detection is. How sensitive can I make it to see
21 what the lowest concentration I can see.
22 Q. Thank you, Dr. Longo. Let me, now in looking
23 at testing talc for the presence of asbestos, what is the
24 third point here? We have a misspelling, analytical tool.
25 My bad. Analytical tool plus preparation method. What
26 does that mean? Why is it important in looking at the

Page 1514

1 Direct-Longo-Block
2 testing of talc for the presence of asbestos to look at
3 both the analytical tool that is used and the preparation
4 method for the talc before it's analyzed?
5 A. Because these tools, XRD, X-ray defraction,
6 polarized light microscopy and transmission electro
7 microscopy hasn't changed that much in the actual -- the
8 way it's used and for what you're doing with it. So,
9 these methods, these tools are okay. But to make it more
10 sensitive, 'cause you're not really changing the
11 transmission electron microscope to make it more super
12 duper that you can get down to analytical sensitivity,
13 it's all the preparation method. How I prepare the sample
14 allows you to make it more sensitive or less sensitive
15 depending on what you do to the sample. So, it's all
16 about the preparation method.
17 Q. All right. So, I would like to start with
18 the preparation method. What preparation method did you
19 use when you tested Johnson's Baby Powder to see if it
20 contained asbestos?
21 A. When we first started, we used transmission
22 electron microscopy, but we used what is known as a heavy
23 density liquid separation. We really have two ingredients
24 in this material that we're interested in, talc, which
25 makes up about most of it, and then if there is amphibole
26 asbestos present, tremolite series or anthophyllite

Page 1515

1 Direct-Longo-Block
2 series, there is going to be a very small percentage. All
3 that talc covers everything up. So, for TEM, if you get
4 too many top plates, you can't see through it. So somehow
5 we decided, and it's an old technique, of removing the
6 talc as much as possible, which then allows us to get more
7 material, make it more sensitive just for the asbestos.
8 So, it's called heavy liquid separation.
9 Q. Now this scientific concept of using a heavy
10 liquid or a liquid of a certain density to separate
11 different materials, how old is that scientific concept?
12 A. Hundreds of years. It's not really heavy
13 liquid density. But people who started panning for gold.
14 You're using water. That density is one gram per cubic
15 centimeter. But the gold has a higher density than the
16 rock and dirt. So, that's when they are swirling it
17 around and then pouring it. They are keeping the rock,
18 dirt and clay in suspension so they can pour it off. Then
19 they look what's left, and occasionally there is some gold
20 dust or particles.
21 Q. So, in that situation people are trying to
22 find gold, and they want to get the dirt and other
23 material out of the way so they have a better chance of
24 actually finding what they are looking for?
25 A. Correct. Those densities are so different
26 it's easy to do. Talc and amphibole asbestos is a little

Page 1516

1 Direct-Longo-Block
2 different.
3 Q. What is this demonstrative? We have a
4 bottle. It looks like it has a clear liquid in it and
5 there is some white balls and blue.
6 A. So this is a bottle -- This is one of the --
7 I get invited occasionally to go to middle school students
8 and elementary students.
9 MR. BROCK: Your Honor, I think the question
10 is what is it.
11 A. This is a bottle with water and these are
12 polyethylene essentially round pieces.
13 Q. And is that something you've used just in
14 courtrooms or something you've used to educate people in
15 other context as well?
16 A. This would be the first time I used it in a
17 courtroom.
18 Q. Okay. When do you usually use it for?
19 A. Usually when I go to spend an hour in science
20 classes in middle school and elementary. And I get when
21 they are working on things like understanding matter and
22 density. And get the concept that you can have something
23 of the exact same size, but the matter of it is that
24 it's more dense. So, I would bring this in and say these
25 are identical particles, but one is denser than the other.
26 Then watch how it separates. That's density separation.

Page 1517

1 Direct-Longo-Block
2 So, what we wanted to do is separate out the
3 talc and separate out any potential amphibole asbestos at
4 the bottom. Remove this. Then we can make it more
5 sensitive.
6 Q. All right. So when you started thinking
7 about looking at Johnson's Baby Powder to determine if it
8 had asbestos in it, how did you approach it
9 scientifically?
10 A. Well, it was clear to us that we needed to do
11 a liquid density separation that's been done in the past.
12 And searched the literature. And found this paper
13 published in 1991, "Amphibole Content of Cosmetic and
14 Pharmaceutical Talc" by Dr. Blount. In here she used
15 heavy liquid density separation to make the polarized
16 light microscopy method more sensitive to amphiboles. She
17 separated out the talc and was able to analyze it and
18 found -- made the method more efficient and was able to
19 detect amphibole asbestos by removing the majority of the
20 talc. This was her classic publication.
21 Q. All right. We have an animation that you
22 helped put together on this heavy liquid separation
23 method?
24 A. Correct.
25 Q. So, the talc is in what's this thing?
26 A. It's a little centrifuge tube that can hold

Page 1518

1 Direct-Longo-Block
2 -- we put approximately anywhere from 30 to a hundred
3 milligrams, and then we disburse it in a heavy liquid
4 density. The density is between the talc, what that
5 density is, in between what the amphibole asbestos is.
6 Q. All right. Then it went into a centrifuge?
7 A. Correct. And the talc goes to the top, it
8 floats and the more dense particles, which are the
9 amphiboles asbestos particles, fibers goes to the bottom
10 while it's spun at a high RPI. I think it's 8,000 that we
11 use. Then you take the tip off with the blue.
12 Q. You actually -- How do you do that?
13 A. We actually flash freeze it in liquid
14 nitrogen, which is minus 256 degrees Fahrenheit. And then
15 cleave the bottom off. And then harvest that, resuspend
16 it and filter it and the top part we discard.
17 Q. Okay. So in addition -- in addition to
18 separating out the talc particles that float to the top,
19 is there any other benefit in terms of how much of the
20 talc sample you can look at by using this method?
21 A. Yes, there is. For example, using this
22 method we have been able to get our analyticals, our
23 detection limit. Detection limit means how many asbestos
24 fibers has to be in the talc before we can find one.
25 Detection limit is finding one fiber. We have a detection
26 limit now that is approaching 3,500 fibers or bundles of

1 Direct-Longo-Block
2 asbestos in the talc before we can find one. Not doing
3 this method means you have to dilute the sample like crazy
4 so you don't get overloading. A typical detection limit
5 for all the methods is approximately anywhere from 10
6 million to 12 million fibers in bundles per gram.
7 Q. Just so we understand this. Is there only so
8 much? You said you can only load a certain amount of
9 material to analyze under the transmission electron
10 microscope, is that right?
11 A. Correct.
12 Q. What is that approximate amount?
13 A. For doing this type of analysis, you can't
14 really load more onto the filter with the talc about 150
15 nanograms.
16 Q. And by doing it this way, are you loading it
17 with the part that sank to the bottom, where the
18 amphiboles asbestos is most likely to be?
19 A. Yes.
20 Q. Does that allow you then to essentially look
21 at more material that's relevant to the issue of finding
22 amphibole asbestos?
23 A. Correct. We can't increase the analytical
24 sensitive by a million times. It doesn't get rid of all
25 the talc.
26 Q. And we'll see some pictures about that later.

1 Direct-Longo-Block
2 A. Correct. So, if I have these boxes, say
3 these are talc particles, TEM, you know you want something
4 like this, where they are not on top of each other. If we
5 don't use this, we can't get to the sensitivities. If we
6 tried to use the same amount of talc, we're going to get
7 it all built up. I'm stacking these. This is what almost
8 every image would look like. The electron beam can't make
9 it through all these talc plates. You have to have it
10 spread out.
11 Q. Dr. Longo, just for the record, were you
12 demonstrating that if you don't use a heavy liquid density
13 separation method, that the talc can obscure the amphibole
14 asbestos so you can't see it?
15 A. If you use the same amount that you're using
16 for heavy liquid density and didn't do heavy liquid
17 density and just filtered that same amount of talc, you
18 could never analyze the sample. You would have to discard
19 it.
20 Q. Now, is this heavy liquid density separation
21 method that you described to the jury, and that is in Dr.
22 Blount's published article, is it talked about in any
23 standard methods?
24 A. It's specifically in the ISO method 22262-2,
25 Section 16 specifically uses heavy density liquid
26 separation for the analysis of talc by either polarized

1 Direct-Longo-Block
2 light microscope, by scanning electron microscope or
3 transmission electron microscope. So, there is an
4 international standard for this method.
5 Q. Let me show you an image of Exhibit 27 that
6 is in evidence and the jury saw with Dr. Webber. Have you
7 become aware of any of Johnson & Johnson consultants using
8 heavy liquid density separation technique or a
9 concentration technique back in the early 1970s to detect
10 asbestos in talc?
11 A. Yes. Again it's a method that has been
12 around for a long time.
13 Q. When you started analyzing Johnson's Baby
14 Powder for the presence of asbestos and read Dr. Blount's
15 article in the published literature, did you know Johnson
16 & Johnson's consultants had been doing work on this in the
17 1970s?
18 MR. BROCK: Objection. Leading.
19 THE COURT: All right. Sustain.
20 Q. When did you first find out and how did you
21 find out that Dr. Reynolds from Dartmouth College had been
22 doing the concentration technique in analyzing talc for
23 asbestos back in the early 1970s?
24 A. It wasn't until we started receiving these
25 kind of documents that are produced through the courts
26 that showed that in the early 1970s they were looking and

1 Direct-Longo-Block
2 trying the heavy liquid density method for the analysis of
3 asbestos in their cosmetic talcs.
4 Q. Here in 1974 the jury has seen Dr. Reynolds
5 from Dartmouth College told Johnson & Johnson that a
6 concentration technique is mandatory because it brings the
7 amphiboles into a reasonable concentration range for
8 optical or other methods of analysis. Do you agree with
9 that statement?
10 A. I do agree with that statement.
11 Q. And why do you agree with Dr. Reynolds that
12 using a concentration technique such as heavy liquid
13 separation is really mandatory in analyzing talc for the
14 presence of asbestos?
15 A. Because if you don't use this technique, the
16 chances of you detecting reasonable amounts of
17 concentration of asbestos present is almost zero.
18 Q. And have you, in this document, have you seen
19 Dr. Reynolds actually show Johnson & Johnson this image
20 and how does this image I guess compares to what you've
21 been doing in testing Johnson's Baby Powder for the
22 presence of asbestos?
23 A. Besides the rubber plug, it's identical. You
24 can see the heavy minerals at the bottom. It's a
25 centrifuging tube at the top. How they are separating it
26 is they run it with this rubber plug and they pull it out

<p style="text-align: right;">Page 1523</p> <p>1 Direct-Longo-Block 2 to remove the talc. We do it a little differently. We 3 think it's more efficient to do the freezing. 4 Q. Then take it just from the bottom? 5 A. When I first saw this I went, there is the 6 method we're including. 7 Q. Okay. And just to be clear, is this a 8 document that was ever published in the peer-reviewed 9 literature? 10 A. No. This was internal studies that was done. 11 THE COURT: It's just about 1 o'clock. 12 MR. BLOCK: This is fine, your Honor. 13 THE COURT: Very well. Let us take a break 14 now for lunch. Keep an open mind. Don't discuss the 15 case. Don't perform any internet searches of any 16 kind. You know the rules. See you at 2:15. Thank 17 you so much. We'll start promptly at 2:15. 18 COURT OFFICER: All rise. Jury exiting. 19 (Whereupon the jury panel departed the 20 courtroom.) 21 THE COURT: Enjoy your lunch, doctor. 22 THE WITNESS: Thank you, your Honor. 23 (Whereupon a luncheon recess was taken.) 24 (Continue on the next page.) 25 26</p>	<p style="text-align: right;">Page 1525</p> <p>Dr. Longo - Plaintiff - Direct (Mr. Block)</p> <p>1 is being discussed there? 2 A They are doing a separation technique to concentrate 3 the tremolite from the talc. That is exactly what the heavy 4 liquid density separation does. 5 Q And it says, this technique has not been written up 6 yet, but evidently when applied to Vermont talc, point zero five 7 percent of tremolite type is found. 8 And then the person from Johnson & Johnson says, "The 9 limitation of this method is that it may be too sensitive." Do 10 you see that? 11 A Yes. 12 Q And as someone who has spent your career identifying 13 asbestos in materials, is a technique being too sensitive 14 something that is a problem or a strength of an analytical 15 technique? 16 A It would never be a problem. 17 Q Okay? 18 A There's no such thing in the analytical world being too 19 sensitive. 20 Q So if you are looking for asbestos in talc, do you want 21 the method that you use to be as sensitive as possible? 22 A You do. It's -- it's just not heard of. Being too 23 sensitive means I'm finding so much, it's off the scale of the 24 instrument. Then you just dilute the sample. 25 Q And using --</p>
<p>Dr. Longo - Plaintiff - Direct (Mr. Block)</p> <p style="text-align: right;">Page 1524</p> <p>1 THE COURT OFFICER: All rise. Jury entering. 2 (Whereupon, the jurors entered the courtroom and 3 were properly seated in the jury box.) 4 THE COURT: Please be seated. Good afternoon, 5 everyone. 6 MR. BLOCK: Good afternoon. 7 Q Dr. Longo, we were just talking about what 8 Dr. Reynolds, from Dartmouth College, had told Johnson & Johnson 9 in 1974 about the concentration technique for identifying 10 asbestos in talc. Do you recall that? 11 A Yes, sir. 12 Q So let me also show you, on the screen, Exhibit 27A. 13 (Whereupon, a demonstrative aid was shown on the 14 screen.) 15 Q The jury has seen in evidence, and this is a document 16 the jury has seen, which was written by a Dr. Robert Rolle of 17 Johnson & Johnson. I want to ask you about what Dr. Rolle from 18 Johnson & Johnson says here. They are talking about a method by 19 a Dr. Pooley from Cardiff University. And it says, Dr. Pooley, 20 it says "The second technique developed also by Dr. Pooley 21 involves pre-concentration of tremolite in talc followed by 22 x-ray defraction analysis." Do you see that? 23 A Yes, sir. 24 Q And as someone who has done analyses on talc and used 25 the concentration technique what is your understanding of what</p>	<p>Dr. Longo - Plaintiff - Direct (Mr. Block)</p> <p style="text-align: right;">Page 1526</p> <p>1 A There is no downside of being too sensitive in the 2 analytical records. 3 MR. BROCK: Objection, your Honor. 4 THE COURT: Sustained. You are answering more than 5 the questin has required. Please listen, sir. 6 THE WITNESS: Sorry, your Honor. 7 Q In terms of the language you were looking at earlier, 8 do you want the limit of detection on any method to be as low as 9 possible when you are looking for asbestos in talc? 10 A That is correct. 11 Q Just as a scientist who has analyzed talcs for 12 asbestos, can you think of any scientific reason where you would 13 conclude that a method was too sensitive in its ability to find 14 asbestos in talc? 15 A No. There is no scientific reason, unless you didn't 16 want to see it. 17 Q So here we have four types of asbestos on the screen, 18 and three have been circled. And how, if at all, is this 19 significant for the heavy liquid separation preparation method 20 used to identify asbestos in talc? 21 A The heavy liquid method is sensitive in that it is very 22 good for tremolite and actinolite because the density of that is 23 higher, much higher than the talc, so you could easily separate 24 that. 25 Anthophyllite, certain types of the anthophyllite, what</p>

Dr. Longo - Plaintiff - Direct (Mr. Block) Page 1527

1 we call solid solution series if the anthophyllite asbestos has
2 no iron, it has relatively the same density as talc. So you
3 won't see anthophyllite without iron.
4 As anthophyllite has certain -- certain anthophyllite
5 asbestos will have more and more iron. It is sensitive to that.
6 So the only anthophyllite we typically see is anthophyllite that
7 has an extra element, iron, in it.
8 Q Okay.
9 So with the chrysotile, what is the weight of
10 chrysotile as compared to the heavy liquid that you are using to
11 separate the talc from the asbestos?
12 A The density of chrysotile is 2.56 grams per cubic
13 centimeter.
14 The density of talc is approximately seven, 2.7 grams
15 per cubic centimeter. And then everything else we are looking
16 at, the density is 3.0.
17 Q So the density of the liquid that is separating the two
18 is what?
19 A Is 2.85. So chrysotile in talc will float in that
20 liquid. Anthophyllite will stay with the talc, unless it has
21 iron.
22 Q How about the tremolite and actinolite?
23 A That is also found present at the detection limit we
24 need --
25 Q Is that because tremolite and actinolite weigh more

Dr. Longo - Plaintiff - Direct (Mr. Block) Page 1528

1 than chrysotile, so they'll float to the bottom of the heavy
2 liquid?
3 A It has a higher density.
4 Q And Dr. Longo, as we get in here testing of Johnson
5 baby powder for the presence of asbestos, what standards or
6 counting rules did you use to determine what you were
7 identifying as asbestos?
8 A We use one of the what I'll call the standard
9 transmission electron microscopy methods or protocols for the
10 analysis of asbestos fibers and bundles.
11 Q What is that?
12 A The protocol calls for -- the EPA has the same protocol
13 that the rest of them do for this. It states that in order to
14 be asbestos, the geometrical, or length or width, has to be
15 greater, the overall length of the asbestos fiber bundle, has to
16 be greater than or equal to point five micrometers. And then it
17 has to have an aspect ratio length or width, of at least five to
18 one or greater. Then it has to have parallel sides to be a
19 fiber. And then it has to match the chemistry, the defraction
20 patterns for the typical types of asbestos.
21 So you have the geometric size, what you have to count
22 to call it regulated asbestos, and then of course it has to be
23 one of the regulated asbestos types.
24 Q Okay.
25 And can you give the jury a sense of your experience in

Dr. Longo - Plaintiff - Direct (Mr. Block) Page 1529

1 identifying asbestos using this EPA/AHERA method that you used
2 as your asbestos counting protocol in this case?
3 A I'm using the same protocol since the late 1980s.
4 Q Did you use this EPA/AHERA protocol in the same way in
5 which you have used this asbestos counting criteria in all the
6 other contexts of your professional work?
7 A Well, it's -- the EPA/AHERA protocol is for the TEM
8 analysis portions that we use. This has a lot of different
9 parts to it, but it's the same counting protocol that's in all
10 these TEM methods, including the ASTM D-5755 method that became
11 a standard method for ASTM in 1995. This is the standard way
12 you do it. This is the method. And if it meets this criteria,
13 the method calls that you record it as regulated asbestos. It's
14 really no guesswork to it.
15 Q Dr. Longo, I'm going to show you what's been marked for
16 identification purposes as Plaintiff's Exhibit 310 and 311.
17 Okay.
18 Dr. Longo, going back to 2017, did you obtain certain
19 products made by Johnson & Johnson over a number of different
20 years spanning many decades?
21 A Yes, we did.
22 Q And at this time in 2017, looking back at that time,
23 did you know of any way you could get products from Johnson &
24 Johnson to test?
25 A I mean, other than brand-new ones off the shelf, no.

Dr. Longo - Plaintiff - Direct (Mr. Block) Page 1530

1 Q But if you were looking to test older ones from
2 previous decades, did you know of any way, back in 2017, where
3 you could get any that Johnson & Johnson may have held?
4 A No.
5 Q So how did you then get 30 products of Johnson &
6 Johnson talcum powder products to test back in 2017?
7 A They were sent to us primarily by plaintiffs' attorneys
8 that either bought them from collectors or bought them off of
9 eBay, or had clients that had retained products from when they
10 were using them, or off the shelf. That was the only way we
11 could get them.
12 Q Okay.
13 Did some of the products have certifications from
14 collectors or some documentation to look at in terms of where it
15 came from?
16 A Um, three of the samples that came from the Casson law
17 firm had a collector who gave certification where he got them,
18 but a majority -- a lot of them came from right off of eBay.
19 Q Okay.
20 A And then there was a number of them where the actual
21 client that the law firm was representing had kept the products.
22 Q And for the ones that were purchased off eBay, were you
23 presented with certain information about the eBay purchase?
24 A Just as this is how much it was and this is the person
25 you got it from.

Dr. Longo - Plaintiff - Direct (Mr. Block) Page 1531

1 Q And in terms of the testing, do we have pictured here
2 the packaging of the 30 products you tested?
3 A Yes.
4 Q And did they span various years in which there was a
5 metal can, and then we see certain plastic containers that had a
6 certain look, and then certain ones that had even more modern
7 look. Do they span many decades?
8 A Correct. You have some of the metal cans -- that is
9 correct, yes. They do, from '40s up until 2000s.
10 Q And did you, in addition to Johnson's baby powder, did
11 you test some Shower to Shower products as well?
12 A Correct.
13 Q Among the 30 products tested, were there some that
14 contained Italian talc?
15 A Yes.
16 Q And based upon your review of the historical material,
17 is it your understanding that Italian talc was used roughly
18 going back to the 1940s, or earlier, and then to approximately
19 1967?
20 A That is correct.
21 Q And have you also gained an understanding that Italian
22 talc was also used for a portion of 1980 when the Vermont talc
23 workers were on strike?
24 A Yes.
25 Q Have you gained an understanding, through your review

Dr. Longo - Plaintiff - Direct (Mr. Block) Page 1532

1 of historical information, that the Vermont talc used in the
2 Johnson & Johnson talcum powder products was used from
3 approximately 1967 to approximately 2003, other than that
4 partial year in 1980?
5 A That's correct.
6 Q And have you also learned that Chinese talc has been
7 used in Johnson baby powder products and talcum powder products
8 from approximately 2004 through the present?
9 A That is correct.
10 Q And among the 30 products, some contain Italian talc,
11 some contained Vermont talc and some contained Chinese talc?
12 A That is correct.
13 Q All right.
14 MR. BROCK: Objection. Can we approach for just a
15 minute, your Honor.
16 (Whereupon, there is an off-the-record discussion.)
17 MR. BROCK: We are good, your Honor. Thank you.
18 THE COURT: Thank you.
19 Q Okay.
20 Now, Dr. Longo, you have these large books in front of
21 you and --
22 MR. BLOCK: May I approach, your Honor, just to see
23 a number.
24 THE COURT: Yes.
25 MR. BLOCK: You have large books in front of you.

Dr. Longo - Plaintiff - Direct (Mr. Block) Page 1533

1 Q We are looking at Plaintiff's Exhibit 310 for
2 identification, and the date of that report is August 2nd, 2017;
3 right?
4 A That is correct.
5 Q Now, did this encompass many months of work by Material
6 Analytical Services?
7 A Yes, almost eight months.
8 Q Before you produced this report dated August 2nd, 2017,
9 had Material Analytical Services done a preliminary draft?
10 A Yes.
11 Q Okay.
12 And were there some differences between the preliminary
13 draft and the report that ended up being dated August 2nd, 2017?
14 A Some minor differences, yes.
15 Q And in general, what sort of minor differences are we
16 talking about?
17 A Well, the -- there was, in the draft report, two
18 pictures that said here's a tremolite fiber and it was actually
19 a bundle. Going back to the actual TEM count sheet, the analyst
20 said bundle, so the table was mislabeled. And there was a
21 couple of those. And we were still trying to figure out if we
22 were going to call it richterite, which is a tremolite solid
23 solution series, so just some minor things.
24 Q Was the data the same in terms of the count sheets that
25 are represented in your report?

Dr. Longo - Plaintiff - Direct (Mr. Block) Page 1534

1 A Yes. The microscopist that's doing the analyst called
2 it a bundle, and then when the table -- when the figure was made
3 under the photograph, it said fiber on a couple of them.
4 Q Was the goal, then, for your August 2nd, 2017 report to
5 have it be as accurate as possible?
6 A It's always our goal.
7 Q Okay?
8 A But it has to be finalized.
9 Q So looking at the results of your August 2nd, 2017
10 report of these Johnson baby powder products, including Shower
11 to Shower, did you find asbestos in some these products?
12 A We did.
13 Q How many of them did you find asbestos in and how many
14 did you not find asbestos in?
15 A Um, I think it was approximately 18 or 19 that were
16 positive, so about 56, 57 percent initially.
17 Q Okay. Here it says 17 of 30?
18 A I should have looked up there. I would've remembered
19 better.
20 Q Is that consist end with your recollection?
21 A Yes, sir.
22 Q Now, in terms of the concentration in terms of the
23 amount of asbestos you found in these Johnson & Johnson talcum
24 powder products, did you use an accepted methodology of taking
25 the number of asbestos fibers that you found and expressing them

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1535

1 in terms of a concentration of fibers per gram?
2 A Yes.
3 Q How did you do that?
4 A In the TEM analysis you are looking at this grid. In
5 that grid there is area that you are analyzing. The grid -- I
6 don't know if you have seen pictures of a grid already, okay.
7 You've seen it. So you are looking in that area and you count,
8 say, you look at a hundred grid openings, is what we do. And if
9 you find ten fibers or ten bundles of asbestos in that hundred
10 grid openings, then you know that you've analyzed an area of 1.1
11 millimeter squared. Well, the whole filter is 201 millimeters
12 squared, so then you have to do the math on how many of that ten
13 in a hundred would be on the whole filter, since you are taking
14 a random portion of the filter. Then you calculate it to how
15 much you test it. It's standard protocol for TEM analysis,
16 because you cannot analyze the entire sample.
17 Q Okay.
18 And so was there a range of the amount of asbestos that
19 you found in the 17 of the 30 products that you found to contain
20 asbestos?
21 A We range from right at our detection limit of
22 approximately 8,000 8,800, 8,700, up to 15 million one hundred
23 fibers per gram of regulated asbestos.
24 Q So we have concentrations as high as 15 million fibers
25 per gram, 4,120,000 fibers per gram 1,310,000 fibers per gram,

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1536

1 and then we have some ones that are down at around 8,600 or
2 8,700 fibers per gram; is that right?
3 A That's correct.
4 Q And so for the ones that are very lowest, how many
5 fibers of asbestos were found for the ones that are at the
6 lowest level of detection?
7 A That is right at our detection limit. Either one fiber
8 or one bundle of regulated asbestos.
9 Q Have you been able to bring your key text limit down
10 since you tested these three?
11 A Our lowest detection limit now about 3,500
12 fibers/bundles per gram.
13 Q So we looked earlier at the limit of detection. So
14 with respect to the 13 of these 30 that you did not detect
15 asbestos, are you able to conclude that those samples of Johnson
16 talcum powder products contain zero asbestos?
17 A No.
18 MR. BROCK: Objection, your Honor.
19 THE COURT: Looking for a foundation?
20 MR. BROCK: I object to foundation.
21 MR. BLOCK: So I'll do that, your Honor.
22 THE COURT: Very well.
23 Q So based upon the limit of detection that you have for
24 this testing of Johnson & Johnson talcum powder products, what
25 are you able to determine with regard to the 13 of the 30 in

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1537

1 which you did not detect asbestos?
2 A You could only determine that there's no asbestos
3 present above -- at or above your detection limit. So if you
4 have a detection limit of 8,000 and you don't find anything, you
5 can just say it's non-detect, that at a minimum, you could say,
6 from the concentration present, if present at all, is below
7 8,000 fibers/bundles per gram. It's not saying it's there. You
8 can't say it's not there. You can -- and that's how it works in
9 the analytical world. It's always less than your detection
10 limit. It never says it's not there, it's clean, but less than
11 your detection limit.
12 Q Okay.
13 Dr. Longo, let me ask you about this column. It says
14 aspect ratio. Can you talk to us about what you found in terms
15 of the aspect ratio of the asbestos you found in these Johnson &
16 Johnson talcum powder products in terms of the length versus the
17 width of the asbestos particles?
18 A If you recall, the protocol says that the aspect ratio,
19 how many times long it is within wide, has to be greater than or
20 equal to five to one. So for each of the sets of samples, we
21 calculated the average aspect ratio. And the average aspect
22 ratio for each set of samples for the 15 million one hundred
23 fibers per gram, we counted over a hundred fibers and bundles.
24 The average aspect ratio of that was 12 to one.
25 At the end of the day, all the aspect ratios for all

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1538

1 the particles was approximately ten to one. And that was two
2 hundred and something individual fibers --
3 Q All right.
4 A -- and bundles.
5 Q And it says "fiber type" and you list -- let me ask you
6 about the first one that is listed as tremolite in a number of
7 the samples. Did you find tremolite asbestos in these Johnson
8 baby powder samples?
9 A Yes. According to the counting rules these are all
10 regulated tremolite asbestos fibers or bundles.
11 Q And we see the jury heard a lot about tremolite. We
12 see -- and the jury heard about anthophyllite. We see one that
13 says richterite. What is richterite?
14 A Richterite is a form of tremolite. It's a little
15 complicated. It's called the solid solution series for
16 tremolite. And what happens is when tremolite is formed from
17 the magma or volcanic, there is all different chemistry, solid
18 solution chemistry going on.
19 If the area where it's being formed has some potassium
20 in it, it would get incorporated into the mineral or the
21 crystal, and because it has that potassium or sodium, it's
22 called richterite. It used to be called sodic tremolite, or
23 just tremolite, but now it's been a little bit more redefined.
24 So everything else is the same, except that it has a
25 little potassium element peak, and you call it richterite. So

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1539

1 you have tremolite, winchite, richterite and actinolite. This
2 is all the tremolite solid solution series.
3 Q Was each product that you sampled from given a sample
4 ID that shows up in your data?
5 A Yes, sir.
6 Q All right.
7 And then you have the sample type, and JBP stands for
8 Johnson's baby powder?
9 A It does.
10 Q And they are all Johnson's baby powder, and then two of
11 them are Shower to Shower, S/S?
12 A Shower to Shower, but not Johnson & Johnson Shower to
13 Shower for those two.
14 Q So at some point, was it in the later 2000s, like 2012
15 or so, did Johnson & Johnson, did another company start selling
16 Shower to Shower?
17 A I think they sold them the product line, if I read it
18 correctly, and then they were selling the same thing.
19 Q So let's go ahead and look at -- inside some of your
20 data here. And we could see, if we look at this, it says
21 M65205-001. And is that the sample ID?
22 A It is.
23 Q And then we have a dash 075?
24 A The 075 means that is the 75th tremolite -- regulated
25 tremolite asbestos fiber bundle that we've come across during

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1540

1 the analysis. So we label every one and take a picture of it
2 and did the chemistry, et cetera.
3 Q Is this the picture of tremolite asbestos as seen
4 through the electron microscope from a sample of Johnson's baby
5 powder that you tested?
6 A Yes, using the counting rules, EPA, et cetera, it meets
7 the definition. That's the length. So that 4.4 micrometers is
8 greater than or equal to 0.5, and the aspect ratio -- it has to
9 have parallel sides. That is parallel sides. There is a little
10 bit in the middle there where you could see its laying on a talc
11 plate. And point two micro meters, so if you divide 4.4 by
12 point two, that should give you approximately 20 -- I think it
13 is -- an aspect ratio of 20 to one or so.
14 Q So what is below this tremolite asbestos that you found
15 in Johnson's baby powder? What is this material here on the
16 center to bottom right part of the picture from the electron
17 microscope?
18 A That is talc.
19 Q And so if you did not do the heavy liquid separation
20 method that Dr. Blount published about what would this look
21 like?
22 A You could make it look the same, but you would have to
23 do a serious dilution to it so that you could get them spread
24 out. If you were to use the same weight without the heavy
25 liquid density separation that we used, if you used that exact

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1541

1 same weight, you couldn't analyze it. The grid openings would
2 be all covered up.
3 Q All right.
4 So, I want to ask what you did with each particle of
5 asbestos to confirm that it was asbestos. So you have the
6 picture from the electron microscope. What about the chemistry
7 of the particle? Did you do a chemistry analysis to determine
8 whether it's asbestos?
9 A Yes, the EDS. We can take the individual chemistry on
10 that microscopic fiber. And if you go from left to right, the
11 very first thing you see is Cu, which is copper. And if you go
12 to the far right, you should have a big copper peak -- that's
13 calcium. So it's been cut off. The copper peak is because it's
14 sitting on top of grid and you get fact scattering elements from
15 that. Then you have magnesium, silicon, calcium and a little
16 iron.
17 Q So the magnesium, Mg; is that right?
18 A Correct.
19 Q Silicon, Si; is that correct?
20 A Right.
21 Q And then calcium, Ca?
22 A Ca, and then we see iron. And then we have the rest of
23 the copper peak.
24 Q If you could just sort of give us a way to remember.
25 How do we know we are looking at the chemistry of tremolite?

Page 1542

1 A That ratio. You see, if you were to take silicon in
2 the middle.
3 Q Okay. The high peak?
4 A Let's say an arbitrary ten. The magnesium is going to
5 be approximately 2.5 to three aspect ratio, 2.5, and then the
6 calcium is going to be about two. So you always have this high
7 silicon peak, magnesium higher than calcium, but not too much.
8 It's a pattern that we see over and over and over, and because
9 it's fibrous, because it has an amphibole -- you get to the
10 defraction. That's absolutely tremolite.
11 (Continued on the next page.)
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Page 1543

1 Direct-Longo-Block

2 Q. Okay. So we had the magnesium and then we
3 have the silica and then there is sort of a little
4 downhill between the magnesium and the calcium?

5 A. Correct. That is a fingerprint for
6 tremolite.

7 Q. And so we have also heard from Dr. Webber
8 that you also looked at the chrystalline structure to make
9 sure that this is tremolite asbestos. And what are we
10 looking at here for the same particle of asbestos,
11 M65205-001-075. And that's what we were looking at the
12 chemistry of that particle, right?

13 A. Correct.

14 Q. Now what are we looking at in terms of to
15 confirm the chrystalline structure?

16 A. This is the defraction pattern of that fiber.
17 And you can see that going from top to bottom, little bit
18 left to right, you can see these row of dots. Those rows
19 of dots are showing us the actual chrystalline structure.
20 What we're interested in here is the distance from row to
21 row. That's the distance from one row of atoms to the
22 next. That's a very precise distance for what we call
23 amphibole. And we just verify that that has the same
24 distance that it's suppose to have for these type of
25 asbestos -- regulated asbestos here tremolite. So you
26 couple that with the chemistry. Then you have the

Page 1544

1 Direct-Longo-Block

2 morphology that is fibrous. And it meets a definition of
3 regulated asbestos fiber.

4 Q. All right. So for each and every particle of
5 asbestos that Material Analytical Services found in
6 Johnson's Baby Powder and Shower to Shower with the
7 transmission electron microscope, did you document that
8 with a picture of each particle of asbestos, the EDS
9 showing the chemistry of each particle of asbestos and the
10 SAED showing the chrystalline structure of each particle of
11 asbestos?

12 A. No, yes and yes.

13 Q. Okay.

14 A. The no is in this particular sample we had
15 over a hundred some odd fibers and bundles, so we took
16 representative pictures. We always verify to have the
17 chemistry. We always verify to have the defraction
18 pattern. If we're seeing fibers of this many asbestos
19 fibers in one sample, then we'll -- may not document every
20 one of them.

21 Q. Okay.

22 A. But most all the other ones we have, just
23 because it's repetitious of the same thing.

24 Q. All right. And now is there a way for a lab,
25 when they see tremolite asbestos in a sample, to compare
26 it with a known reference that everyone agrees is

Page 1545

1 Direct-Longo-Block

2 tremolite asbestos?

3 A. Yes.

4 Q. And did you do that in your testing of
5 Johnson's Baby Powder when you found asbestos?

6 A. Well, no. We did that a long time ago when
7 we got certified for making these types of analysis.

8 Q. How do you use these reference samples to
9 make sure that your analysts are properly trained to
10 identify tremolite asbestos?

11 A. We had these references in our lab since we
12 got our certification since we opened the door. These
13 references have been used over and over. Analysts, new
14 analysts will analyze these as a blind sample. So, even
15 though we're analyzing tremolite asbestos in the cosmetic
16 talc, we have been doing this same thing for years and
17 years and years. But yes, we had these standards, and we
18 did compare them to the tremolite that we were finding in
19 the cosmetic talc.

20 Q. So this National Institute of Standards and
21 Technology, how does it work? You can order?

22 A. You order from them. They are the
23 national -- they are the standards in technology of the
24 U.S. Department of Commerce. It's not only asbestos.
25 They have all kinds of standards for all kinds of testing
26 labs. It's a requirement that we have those standards in

Page 1546

1 Direct-Longo-Block

2 our facility in order to make those identifications.

3 Q. All right. So, earlier we saw an example of
4 what tremolite asbestos in Johnson's Baby Powder looks
5 like. Is your lab able to utilize pictures of what
6 tremolite asbestos looks like in the known tremolite
7 asbestos NIST standard?

8 A. Yes.

9 MR. BROCK: May I ask, just so we could have
10 a good record, may I ask since the slides are not
11 numbered, if you can just state the title please of
12 the slide that you're referring to so we'll have a
13 record of it.

14 MR. BLOCK: Sure. National Institute of
15 Standards and Technology, tremolite standard. On the
16 left side you see pictures of tremolite asbestos.

17 Q. And can you tell ladies and gentlemen of the
18 jury how if at all, that is consistent or not, with the
19 tremolite asbestos you found in the Johnson's Baby Powder
20 and Shower to Shower?

21 A. Well, one, it meets a definition of a
22 regulated asbestos fiber on the left side, because it's
23 parallel sides, has the right length aspect ratio. Then
24 if you look on the right side, those two different
25 tremolite regulated asbestos/bundles, the chemistry is
26 identical. And if you look at the chemistry of what we

Page 1547

1 Direct-Longo-Block
2 found in Johnson and Johnson, it is identical. You have
3 high silica. The magnesium and calcium ratio is kind of
4 in a downward slope.
5 Q. So, just to review, what we looked at in an
6 example of the chemistry analysis for the asbestos in
7 Johnson's Baby Powder, you showed us the magnesium and
8 silica and calcium going a little downhill from the
9 magnesium, is that right?
10 A. Correct.
11 MR. BROCK: I'm sorry to interrupt. Can you
12 go back another one. I want to make sure we have it
13 for the record. Is the EDS on this number 75?
14 MR. BLOCK: Yes. We looked at that earlier.
15 Yes.
16 Q. So, if you go to the standard, the National
17 Institute of Standards and Technology, do we again see the
18 magnesium and then the silica and then the calcium going
19 downhill from the magnesium?
20 A. Correct. It's a fairly unique ratio for
21 fibrous material and then of course the selected area
22 electron defraction.
23 Q. All right. Dr. Longo, the book is thick.
24 I'm not going to go through every picture and every EDS
25 and every SAED. I would like to ask you about some of the
26 particles and some of the pictures, just to talk about

Page 1548

1 Direct-Longo-Block
2 what we're looking at and what it means. So, I'm looking
3 at this, this particular particle of asbestos in sample
4 M65329-041. And that would be the sample, is that the
5 sample ID?
6 A. That is. It's our sample ID. And then that
7 number five would be the fifth, fifth asbestos structure,
8 fiber or bundle, in this particular case tremolite, that
9 we have run across so far.
10 Q. All right. And what could you describe for
11 the jury in this picture that would help them understand
12 your analysis finding asbestos in Johnson and Johnson
13 talcum powder products?
14 A. It has parallel sides. 9.45 micrometers in
15 length. It meets the minimum dimension for regulated
16 asbestos. It has an aspect ratio of almost ten to one or
17 so. Parallel sides. And this particular case it's a
18 bundle. You can see, at the top of the left-hand side,
19 you can actually see individual fibers sort of protruding
20 from this structure.
21 Q. Like in the upper left?
22 A. Yes. And down at the bottom you can also see
23 some of these structures. Now it's dark in the middle,
24 because it's electron dense. It's too thick to actually,
25 when you take the photograph, but that's what we would
26 designate as a bundle. A bundle is -- is defined as three

Page 1549

1 Direct-Longo-Block
2 or more fibers parallel in touching. So that there is no
3 -- no light between them. No electron light between them.
4 And then, of course, the chemistry. And then the selected
5 area electron defraction matches what you would expect for
6 tremolite. So, therefore it's tremolite. Then the rest
7 then we have some additional talc plates.
8 Q. All right. And the talc that can be seen
9 here, are we looking at the upper center or the mid right?
10 What are we looking at there?
11 A. Both. You have a very thick talc plate
12 towards the bottom on the right-hand side. And you can't
13 see through it. So, it's very electron dense. It's a
14 thick plate of talc. And then upper right, along on up is
15 some more talc plates.
16 Q. Is one of the important reasons of using the
17 heavy liquid separation so you could have as little of
18 this talc here so you can see the asbestos?
19 A. Yes.
20 Q. So looking at the next picture from sample
21 65208-001-002, it says tremolite. What are we looking at
22 that there, Dr. Longo?
23 A. That's another bundle. So, you can see
24 the -- on the upper right-hand side you can -- this bundle
25 is not quite as thick. You can see more of the individual
26 fibers. And you can see, starting at the upper right-hand

Page 1550

1 Direct-Longo-Block
2 side, looking at from the top going around, you can see a
3 number of individual fibers. Then to the other side you
4 see it's a little more electron dense. You can see other
5 fibrous. So that would be a bundle. And again it's
6 tremolite. You'll have the same chemistry in the same
7 select area defraction analysis that you had for the rest
8 of them.
9 Q. Let me ask you. So, we talked earlier about
10 the amount of asbestos as expressed in fibers per gram.
11 So, when you found this bundle of tremolite asbestos in
12 Johnson's Baby Powder, you count this as one particle or
13 do you count up all the fibers that are together in this
14 bundle and count those as multiple particles?
15 A. No. You only count it as one structure, one
16 bundle. You cannot estimate how many are in there.
17 Nobody has ever agreed, looking at one of these
18 micrographs, how many is there. So, they eliminated that
19 as part of the count, just to get conformity across the
20 board. So you just count it as one asbestos structure,
21 fiber or bundle.
22 Q. Okay. I want you to assume the jury has
23 heard testimony from Dr. Webber that particles of asbestos
24 that are three microns or less in their width or diameter
25 are respirable. Can you tell us whether this tremolite
26 asbestos particle, what's the width or diameter of this

Page 1551

1 Direct-Longo-Block
2 particle?
3 MR. BROCK: Object to the form of the
4 question. I think that's a question for Dr. Webber
5 to answer when he comes back potentially.
6 THE COURT: Do you understand the question?
7 THE WITNESS: I do, your Honor.
8 THE COURT: Are you able to answer it?
9 THE WITNESS: Yes, sir.
10 THE COURT: Go ahead.
11 A. It's less than three micrometers. It's .6.
12 So, it's almost a factor of five times less.
13 Q. Okay. Dr. Longo, let's look at this next
14 structure. And this comes from sample M66173, which the
15 chart you looked at earlier indicates is Johnson's Baby
16 Powder. Tell us about this tremolite asbestos from
17 Johnson's Baby Powder.
18 A. Again we have parallel sides. It looks to be
19 I would call a bundle. And you have to understand when it
20 gets close like this, you have to leave it up to the
21 microscopist to make that decision where it's not like the
22 bundle before where you can see all those fibers sticking
23 out. When he's on the microscope, he can focus through
24 the fiber and he can also put in some binocular types that
25 increase the magnification by 20 times. But I would say
26 looking at the end where you have that little step on the

Page 1552

1 Direct-Longo-Block
2 lower left-hand side, see that step?
3 Q. (Pointing).
4 A. That's actually fibers that are in a step
5 process coming out of the end of the bundle. So, I would
6 say that's a bundle.
7 Q. Okay. And we have other pictures. Let's
8 move on to M66214. Actually M66514. Is that the
9 proper --
10 A. That's the proper.
11 Q. Okay. So, this on the bottom, it should say
12 66514?
13 A. Yes. The New York copy has been corrected.
14 MR. BROCK: I'm sorry. Which number are we
15 using, the one at the top?
16 MR. BLOCK: We're using M66514.
17 Q. What we see here is three different particles
18 of asbestos in this Johnson's Baby Powder.
19 A. Yes, we do. Three, because you can see that
20 there is -- you can see -- you can see the opening between
21 the fibers. You actually call those three different
22 structures or three different fibers.
23 Q. All right. And here it shows anthophyllite
24 asbestos in Johnson's Baby Powder. Is this another type
25 of asbestos, including tremolite, that we looked at
26 earlier?

Page 1553

1 Direct-Longo-Block
2 A. Yes. You have the tremolite solid solution
3 series and then you'll have the anthophyllite solid
4 solution series is what we're primarily finding. I think
5 that's all we're finding in the mines at issue here.
6 Q. Actinolite asbestos in this M66510, which is
7 from Shower to Shower. And this Shower to Shower product
8 you found actinolite asbestos. What can you tell us about
9 this photo from the transmission electron microscope
10 showing actinolite asbestos in Shower to Shower?
11 A. It looks like -- It's close to a bundle, but
12 actinolite is again one of the series of tremolite.
13 Tremolite, actinolite, that's two parts of the solid
14 solution series. If you have the EDS spectra it shows
15 that it has the same ratio of magnesium in calcium but it
16 has higher iron on the tail end.
17 Q. And you saw the historical documents we have
18 looked at. We've actually seen reference to
19 tremolite/actinolite. Are they very similar?
20 A. Yes. They are both regulated asbestos fibers
21 and they have -- they are very similar in their -- the
22 amount of iron is different in the amount of chemistry.
23 Q. And in this Shower to Shower M66510, we see
24 richterites. And is that a fiber of richterite asbestos
25 from Shower to Shower?
26 A. Yes. That's again parallel sides. It's

Page 1554

1 Direct-Longo-Block
2 11.2 micrometers long. It's greater than or equal to 0.5.
3 It's .2 micrometers wide. So that is a 50 to one aspect
4 ratio approximately. So, certainly greater than five to
5 one, equal to five to one.
6 Q. All right. And this next slide, is this the
7 EDS for this structure of richterite which is structure
8 two from M66510-001, the Shower to Shower product?
9 A. It is.
10 Q. We're looking now at the chemistry of it.
11 And we have circled one part of the EDS chemistry
12 analysis. And why is that one part important in comparing
13 richterite asbestos to tremolite asbestos?
14 A. 'Cause the only difference is that the
15 potassium element there, K. And because you have
16 potassium, you will have a little bit lower calcium.
17 Otherwise it's tremolite. And for years and years this
18 was called tremolite or sodic tremolite. It's only when
19 they changed the nomenclature and then EPA made Libby,
20 Montana a super fund site. So now instead of just saying
21 it's tremolite and actinolite, they say it's mostly
22 winchite, richterite, tremolite and a little actinolite.
23 Q. Okay. So there is richterite asbestos. Is
24 that something that historically could be found in attic
25 insulation such as Zone Light attic insulation that used
26 Libby, Montana vermiculite?

Page 1555

1 Direct-Longo-Block
2 A. Libby, Montana vermiculite was used as attic
3 insulation. And that attic insulation would have
4 winchite, richterite, tremolite, actinolite.
5 Q. So, how do you know that the richterite
6 asbestos that you found in this sample of a Johnson &
7 Johnson talcum powder product, how do you know it didn't
8 come from contamination from some attic insulation?
9 A. For two reasons. First reason is less
10 scientific, but you would have to have the container.
11 Open it up. Stick it up in your attic. And then get up
12 there and disturb all that vermiculite over and over again
13 to try to get these concentrations in the bottle. But the
14 scientific reason is the richterite, winchite, tremolite,
15 actinolite, winchite and richterite is approximately
16 .01 percent of the vermiculite used in attic insulation.
17 If that richterite came from the attic insulation and got
18 in the container, how come there is no vermiculite in
19 there? You can't have .01 percent of something of a
20 mixture and 99.9 percent of the other stuff is not there.
21 The only thing in this sample is talc and a little bit
22 other accessory minerals and this richterite. So, you
23 can't have it both ways.
24 We found it with the talc. Talc is in there.
25 There is no vermiculite in there. To think how much
26 vermiculite would have to be in there to get this kind of

Page 1556

1 Direct-Longo-Block
2 concentration, that .01 percent, there is no chance that's
3 what happened.
4 Q. All right. So -- so the asbestos that you
5 found in the Johnson's Baby Powder, Shower to Shower, was
6 that properly identified asbestos as on the EPA AHERA
7 method?
8 A. Yes.
9 Q. Did you find some particles that were longer
10 than five microns in length and some particles that were
11 shorter?
12 A. We did.
13 Q. For the particles that were greater than five
14 microns in length, is that countable asbestos under OSHA
15 and MSHA, the Mine Safety and Health Administration?
16 A. Any of the bundles that were greater than
17 point -- greater than five micrometers, it had a width
18 that was greater than .25 micrometers wide, would have met
19 every definition up there.
20 Q. All right. In terms of the TEM methodologies
21 that you're aware of and that you've used throughout the
22 course of your career, was the asbestos you found in
23 Johnson's Baby Powder and Shower to Shower products
24 properly accountable under asbestos under those laboratory
25 analytical protocols?
26 A. Yes.

Page 1557

1 Direct-Longo-Block
2 Q. Let's talk about Johnson & Johnson's method.
3 Does Johnson & Johnson have a method that the jury heard
4 about called TM 7024?
5 A. Yes, sir.
6 Q. Have you reviewed that method?
7 A. All of them.
8 Q. All right. And was the asbestos that you
9 found in Johnson & Johnson Baby Powder and Shower to
10 Shower properly accountable as asbestos as under Johnson &
11 Johnson's own TEM test method?
12 A. Yes.
13 Q. If we go to --
14 MR. BROCK: I'm sorry. Could you go back.
15 Just for the record, the one you've been talking
16 about is titled "Asbestos Counting Protocols"?
17 MR. BLOCK: Yes.
18 Q. If we go to the next slide we see that this
19 is Exhibit 4. That the jury has already seen in this
20 case. And it's dated March 8th, 1989. And you see the
21 Johnson & Johnson TM 7024 method?
22 A. Correct.
23 Q. Are you aware and familiar with Johnson &
24 Johnson's definition that they use out of court for what
25 is a fiber properly identified by TEM analysis when
26 looking for asbestos?

Page 1558

1 Direct-Longo-Block
2 A. Yes.
3 Q. What is it?
4 A. That it has parallel sides, and that the
5 aspect ratio length to width is greater than or equal to
6 three to one.
7 Q. Okay. Now, you just told the jury that you
8 only counted asbestos that was five to one when you
9 counted asbestos in the Johnson & Johnson's talcum
10 products, is that correct?
11 A. That's correct. That is the TEM method that
12 is well accepted in the scientific community today and
13 what we're certified to do, what we have to do when we
14 count asbestos using that method.
15 Q. If you had -- So, if you had used Johnson &
16 Johnson three to one requirement as opposed to your five
17 to one requirement, would you have counted more?
18 A. Yes.
19 Q. So the definition you used in terms of aspect
20 ratio for your testing, was it more restrictive or less
21 restrictive than Johnson & Johnson's own TEM standard for
22 identifying asbestos?
23 A. It's more restrictive on the aspect ratio.
24 Q. The jury has also seen Exhibit 2, which is
25 Johnson & Johnson has raw material specification
26 requirements for testing its talc used in its baby powder

Page 1559

1 Direct-Longo-Block
2 and Shower to Shower products for asbestos. Are you
3 familiar with the J4-1 method and also the TM 7024 method
4 that we just looked at?
5 A. Yes.
6 Q. And looking at Johnson & Johnson's
7 definition, we'll take it one step at a time. It says --
8 Strike that. Johnson & Johnson's raw material
9 specifications says "Asbestos is defined to be the fibrous
10 serpentine, chrysotile and the fibrous forms of the
11 amphibole group as represented by amosite, anthophyllite,
12 crocidolite, tremolite and actinolite." Do you see that?
13 A. Yes.
14 Q. Did you find fibrous tremolite in Johnson's
15 Baby Powder and Shower to Shower products?
16 A. We did.
17 Q. Do you agree with the definition that Johnson
18 & Johnson gives that that's asbestos?
19 A. Yes, I do.
20 Q. And did you find fibrous anthophyllite in
21 Johnson's Baby Powder and Shower to Shower products?
22 A. Yes.
23 Q. Is that asbestos?
24 A. It's asbestos according to the counting rules
25 and regulations that we have to follow for these types of
26 methods.

Page 1560

1 Direct-Longo-Block
2 Q. All right. Is the same true for fibrous
3 actinolite? Did you find fibrous actinolite in Johnson &
4 Johnson talcum powder products?
5 A. Yes. We found fibrous tremolite solid
6 solution series as well as the anthophyllite solid
7 solution series. And those sub series where you have
8 tremolite, winchite, richterite, actinolite, those are all
9 fibrous. In anthophyllite series is anthophyllite,
10 cummingtonite and grunerite. And those are all fibrous.
11 Q. Okay. And were the fibrous amphiboles that
12 you found in Johnson & Johnson's talcum powder products
13 asbestos under all the laboratory and analytical methods
14 for TEM microscopy that you follow as a professional?
15 MR. BROCK: I'll object to the form of the
16 question. It included a few different standards. So
17 I think you need to be specific on that, please.
18 THE COURT: All right. Be more specific,
19 please.
20 Q. Under what standards was the -- were the
21 fibrous amphiboles you found in Johnson & Johnson talcum
22 powder products properly counted asbestos?
23 A. For the TEM it matches the standards for the
24 EPA AHERA. Only the TEM, the methodology. The ISO TEM
25 methods both for ambient air and for indirect preparation,
26 TEM methods. The two ASTM methods. The D5755 and the

Page 1561

1 Direct-Longo-Block
2 D5756, people are still using that method, but that was --
3 the 56 one was withdrawn by ASTM last year.
4 Q. And the ASTM 5755 that you just testified,
5 would properly count the asbestos you found in Johnson &
6 Johnson's talcum powder products as asbestos, is that the
7 one you told us about earlier, that you went through that
8 long process in creating with the ASTM group?
9 A. Yes. It's still been -- it's still a
10 standard. It's been validated. You have to understand
11 every one of those has the exact same accounting rules.
12 Every one of them says greater than or equal to 5
13 micrometers -- 0.5 micrometers in length. Has to have
14 parallel sides. Has to have at least a five to one aspect
15 ratio. And then, of course, match the chemistry and
16 crystalline for asbestos. And it's all regulated
17 asbestos. Every one of those methods is the same for TEM.
18 Q. All right. Under Johnson & Johnson's raw
19 material specification, are fibrous amphiboles asbestos?
20 A. That's their definition, yes. I agree with
21 it.
22 Q. The jury has heard terms such as asbestiform
23 habit. Does it say anything in Johnson & Johnson's
24 definition about asbestiform habits?
25 A. No. The habit -- Asbestiform means nothing
26 more than it's formed like asbestos. The habit is

Page 1562

1 Direct-Longo-Block
2 crystalline. It's a crystalline habit.
3 Q. Was the asbestos that you found in Johnson &
4 Johnson's Baby Powder and Shower to Shower asbestiform?
5 A. It meets the geological -- It meets the
6 definition of what asbestiform is. It's just formed like
7 asbestos. Everything we counted and reported is regulated
8 asbestos based on the health criteria. The health effects
9 criteria. It's not me calling it asbestos. These are the
10 protocols that have been around years and years.
11 MR. BROCK: Objection, your Honor. This is
12 way beyond the answer to the question.
13 THE COURT: Way beyond.
14 THE WITNESS: Sorry again, your Honor.
15 THE COURT: Thank you. The jury is
16 instructed to disregard the answer after the
17 introduction. What was it, a yes? It's not there.
18 MR. BLOCK: Well there was --
19 THE COURT: You can ask a follow-up question.
20 MR. BLOCK: Sure.
21 THE COURT: It's --
22 MR. BROCK: I think the answer at the end of
23 everything we counted and reported is regulated
24 asbestos based on the theory.
25 THE COURT: Yes.
26 Q. And the jury has heard about a high tensile

Page 1563

1 Direct-Longo-Block
2 strength. The term high tensile strength. Is there
3 anything in Johnson & Johnson's definition about high
4 tensile strength?
5 A. No, there isn't.
6 Q. And how about in their definition, in Johnson
7 & Johnson's out-of-court definition, anything about the
8 flexibility of the fibers?
9 MR. BROCK: I'm objecting. Continued
10 reference to out-of-court position. I think that's
11 argumentative.
12 MR. BLOCK: I can lay a foundation, your
13 Honor.
14 THE COURT: All right.
15 Q. Dr. Longo, in reviewing Johnson & Johnson's
16 raw material specifications, have you been able to
17 determine whether they were created for litigation or they
18 were just specifications that they truly used outside of
19 court?
20 MR. BROCK: I will object to that witness
21 commenting on created for litigation. That's not
22 appropriate for an expert.
23 THE COURT: Sustained as to that part.
24 MR. BLOCK: Okay.
25 Q. So, Dr. Longo, looking at some other
26 standards. I think you addressed this so far. But was

Page 1564

1 Direct-Longo-Block
2 the asbestos that you identified in Johnson's Baby Powder
3 and Shower to Shower, is that accountable asbestos? Is
4 that properly counted as asbestos under the ISO ASTM
5 standards as well?
6 A. Yes. They all have the same definition. The
7 geometry of it, aspect ratio, it's called regulated
8 asbestos.
9 Q. All right. Now, this ASTM 5755, that's the
10 one that you said that you worked to create, and is that
11 still in effect today?
12 A. Yes.
13 Q. How about ASTM 5756, is that still in effect
14 today?
15 A. No.
16 Q. And who created that one?
17 A. That was my counterpart, RJ Lee Group.
18 Q. Dr. Longo, did you -- Since these products
19 did not come directly from Johnson & Johnson that you
20 tested, did you take any steps to determine whether the
21 packaging showed any signs of tampering? Did you look at
22 that issue?
23 A. Yes.
24 (Continue on the next page.)
25
26

Page 1565

Dr. Longo - Plaintiff - Direct (Mr. Block)

1 Q And we are looking at a picture right now, and it's the
2 top of a Johnson & Johnson container. And we could see 275RB.
3 What does this picture have to do with the evaluation you did to
4 assure that there was no tampering with these products?
5 A The first thing we wanted to do is see if you could
6 take the tops off. It's -- the tops were a turn, and you have
7 dispensing holes. We shake it out like a salt shaker. You
8 can't, at least by human pressure, you cannot get that top off.
9 It's designed not to be able to come off so you don't spill it.
10 So then we wanted to see if we pried the top off, would
11 that polymer or plastic leave any tracks that somebody had pried
12 it off. So we did that on a couple of samples.
13 So on the left-hand side where that blue, there is blue
14 coming down the cap. If you look under there, you can't see any
15 damage. And then after the top was pulled off, the screwdriver
16 caused indentation at the top. It's the only way you could get
17 the container -- the top off without just cutting it.
18 Q So did you do an experiment to determine whether if you
19 pried the top off, it would show damage?
20 A Yes. So we concluded that all these containers, except
21 for one, the tops had not been taken off.
22 Q All right. How about that one?
23 A You may have a photograph of it. Maybe not.
24 Q I don't think I do, but tell us -- actually, I think I
25 do.

Page 1566

Dr. Longo - Plaintiff - Direct (Mr. Block)

1 MR. BLOCK: Can we switch to the Elmo, please.
2 (Whereupon, a demonstrative aid was shown on the
3 screen.)
4 Q And is this the photograph you were thinking of?
5 A Yes. You have on the top is cans that were sent to me.
6 These cans were all sent to me by one plaintiff's attorney. And
7 on the top is a canister. You could see three of them that are
8 identical. And those cannisters were never -- never had talcum
9 powder in them. They don't even have a dispenser on them. They
10 were an anniversary can, I think a hundred year anniversary can
11 that had a coupon inside. So the attorney had sent me these
12 samples, sent me four empty containers.
13 Now the last container is an older one, and it does
14 have the dispenser on top, and these are the metal containers.
15 You can't get those tops off either. And one of the ways you
16 can get these tops off is to damage it around the side, like
17 this one, where it's all bent in (indicating). This is not a
18 sample we analyzed. There was nothing in it.
19 Q So for the 30 samples you analyzed?
20 MR. BROCK: I'm going to ask for a record if you
21 could say what page in the report that is. That's the one
22 with the metal.
23 MR. BLOCK: Yes.
24 Q So for the 30 samples you did analyze, did you, in your
25 analysis, determine that they did not have evidence of being

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1567

1 tampered with or of the tops being pried off, either the plastic
2 or metal containers?

3 A We did, there was no evidence of the containers being
4 tampered.

5 Q Did you do any work in terms of looking at the particle
6 size of the Johnson's baby powder, Shower to Shower products
7 compared to ones that you just bought off the shelf?

8 A Yes.

9 Q Tell us about that?

10 A We wanted to see if the particle sizes -- this is all
11 cosmetic talc. It all goes through what we call a 200 mesh
12 screen. You want to get the smallest particle. So it's milled.
13 So we wanted to see if their specifications, if we analyzed the
14 same way, sample after sample, all these 30 sample's, compared
15 to the one off the shelf, would the particle size distribution
16 be different or have the same particle size distribution for the
17 amount of particles from low to high. And we found that the
18 particle size distribution was the same, essentially, consist
19 the from all 30 and compared to something off the shelf.

20 Q So you went out and bought some Johnson's baby powder
21 just right off the store shelf, and then compared the particle
22 size of those products compared to the 30 you tested?

23 A Yes.

24 Q And was it consistent?

25 A It was all consistent.

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1568

1 (Whereupon, a demonstrative aid was shown on the
2 screen.)

3 Q Let me ask you, the jury heard about laboratory blanks.
4 How-- when you do a test, you can do the test with blanks and
5 make sure there's no asbestos so that when you test a sample, if
6 you find asbestos, you could assure yourself that the asbestos
7 came from the actual talc sample.

8 Did you use laboratory blanks as part of the testing
9 here?

10 A Yes, but they are not really laboratory blanks. They
11 are call process blanks.

12 Q Okay. "Process blanks", what is that?

13 A Laboratory blanks is you just take one of the filters
14 and you haven't done anything to it and you put it in an analyze
15 it and make sure there is nothing there.

16 Q What did do you with process blanks in this testing to
17 assure there was no contamination?

18 A Everything was done exactly the same with the process
19 blank, except no talc.

20 MR. BROCK: I'm sorry, could you speak up a little
21 bit.

22 A I'm sorry. Everything was done exactly the same,
23 except no talc. So the heavy liquid, the centrifuge, the whole
24 process is the same. Liquid nitrogen, cutting it, filtering it,
25 but no talc. If there is any contamination in the lab, you

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1569

1 would see it.

2 We have not had any of these process blanks for any of
3 these cosmetics talcs, and we've done a number of them. Each
4 set of samples has a process blank, did we ever find any
5 asbestos on the process blank. And we just don't do this for
6 cosmetic talc. We do it for all our samples.

7 If, you know, they'll send us -- when we do filters, or
8 we are filtering anything, we run process blanks. I cannot
9 recall the last time, ever, that we had any asbestos in any
10 process blank. And certainly there was none in any of the
11 Johnson & Johnson process blanks, to date.

12 Q All right. And then we have a picture of -- is this a
13 hood or some kind? Or what kind of device are we looking at
14 here? There is a yellow sticker in the upper center, and
15 there's, it looks like some glass. What is that and does that
16 have anything to do with, I guess, guarding against
17 contamination?

18 A That's a biological safety hood. That is guarding
19 against anybody who is preparing these samples from getting
20 contaminated, because it's all designed for the air flow to go
21 in through the filtration system.

22 Anything that is released inside that hood is filtered
23 out, and then every set of samples, that hood is completely
24 decontaminated. So, yes, we make sure the folks working there
25 doing the preparation don't get contaminated, as well as any

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1570

1 cross contamination between samples.

2 (Whereupon, a demonstrative aid was shown on the
3 screen.)

4 Q Dr. Longo, we talked earlier that in 2017 you did not
5 have access to any products from Johnson & Johnson to test. Did
6 there come a time in 2018 when you obtained one sample, to begin
7 with, from Johnson & Johnson, that they had preserved and they
8 had put in what is known as the Johnson & Johnson Museum?

9 A Yes.

10 THE COURT: Let's take a break-in five minutes. Is
11 that a good time for you?

12 MR. BLOCK: This is a fine break, your Honor if you
13 are ready.

14 THE COURT: See you in ten minutes.

15 MR. BLOCK: Thank you.

16 THE COURT OFFICER: All rise. Jury exiting.
17 (Whereupon, the jurors exited the courtroom and
18 went into the jury room for a ten-minute recess.)

19 THE COURT OFFICER: All rise. Jury entering.
20 (Whereupon, the jurors entered the courtroom and
21 were properly seated in the jury box.)

22 THE COURT: Thank you very much. Please be seated.

23 Q Dr. Longo, I would like to turn to testing that you did
24 on Johnson & Johnson's baby powder products that came from
25 Johnson & Johnson. And I'm going to show you what's been marked

Dr. Longo - Plaintiff - Direct (Mr. Block) Page 1571

1 for identification as Plaintiff's Exhibit 314 and 316.
2 (Whereupon the documents were handed to the witness.)
3 Q Okay.
4 All right, Dr. Longo, in terms of products that were
5 from Johnson & Johnson, did you first test a product from 1978.
6 This container that the jury can see here?
7 A Yes, sir.
8 Q And does that container say "purest protection"?
9 A It does.
10 Q And in this report, dated February 16, 2018, how many
11 samples did you take from that container?
12 A We received two samples taken from the same container.
13 Q And did you find anthophyllite asbestos in the samples
14 from this 1978 Johnson baby powder container that says pure rest
15 protection?
16 A Yes.
17 Q We've looked at a number of pictures from the
18 transmission electron microscope. I would like to ask you now,
19 do we have an SEM, a scanning electron microscope picture, to
20 show the jury from that product, from the sample ID 68233. Can
21 we see an SEM photo there of anthophyllite asbestos?
22 A Yes. That is one of the bundles that we detected.
23 This is one of the anthophyllite solid solutions series that has
24 iron in it.
25 Q What is significant about this SEM photo of

Dr. Longo - Plaintiff - Direct (Mr. Block) Page 1572

1 anthophyllite asbestos in this 1978 container of Johnson's baby
2 powder?
3 A You could see that the structure is composed of
4 multiple individual fibers all parallel to each other, all
5 touching. So this is the classic example of a bundle of
6 regulated asbestos, and because it is a bundle, nobody argues
7 that it's not asbestiform, because you can't break up rocks and
8 form perfectly parallel fibers with each other. This was formed
9 in an asbestiform habit, because it's fibrous and it's a bundle.
10 MR. BROCK: What page is this in the report?
11 MR. BLOCK: We have exhibits. We produced to you
12 Exhibit 315. And do we have the next slide?
13 (Whereupon, a demonstrative aid was shown on the
14 screen.)
15 Q Do we have a number of pictures that you put together
16 where we could see the length of that anthophyllite asbestos and
17 observe --
18 A If you stop it there.
19 Q I don't know if I could do that?
20 A Okay. It's a montage of that entire bundle.
21 Q And what's important about that in terms of the
22 identification of anthophyllite asbestos?
23 A This is -- the source of this is the Vermont mine, and
24 it's -- anthophyllite asbestos is consistently what is found in
25 that mine, and it's one of the regulated asbestos types.

Dr. Longo - Plaintiff - Direct (Mr. Block) Page 1573

1 Q And then in October of 2018, did you do a report
2 looking at ten Johnson's baby powder products that were from
3 Johnson & Johnson, preserved by Johnson & Johnson and kept at
4 the Johnson & Johnson Museum?
5 A Yes.
6 Q Were these products all dated?
7 A They were.
8 Q And did these products in this report, did they come
9 from 1967 to 1985?
10 A Yes.
11 Q And so the source of the talc that would be in these
12 containers of Johnson's baby powder would be what?
13 A These would all be from starting in '67, all from the
14 Vermont mine, um, to '85. During that time frame they were
15 using Vermont cosmetic talc.
16 Q Could we see, although the packaging changes a little
17 bit here and there, they all say purest protection with that
18 pink ribbon?
19 A Correct.
20 Q And what were your results in terms of being able to
21 detect asbestos in those ten Johnson & Johnson's baby powder
22 products?
23 A Out of the ten samples, seven were positive for
24 regulated asbestos. So 70 percent of the samples had regulated
25 asbestos present in them.

Dr. Longo - Plaintiff - Direct (Mr. Block) Page 1574

1 Q Now, in the earlier test that you did, I think you said
2 you used transmission electron microscopy only?
3 A Correct.
4 Q Did you use the Blount method for testing these ten
5 samples and did you look at it under the transmission electron
6 microscope the polarized light microscope or both?
7 A Both. We followed three methods. The standard TEM
8 method that we've been talking about for a while. We also
9 followed the ISO 22262-1 PLM method, optical microscopy without
10 heavy liquid separation. The TEM was 22262-2, heavy liquid
11 separation TEM, what we've been talking about.
12 And then last one we did was follow Blount's paper that
13 she published in 1991, heavy liquid density for PLM. So we did
14 three different methods.
15 Q Just to be clear. Dr. Blount's preparation method, in
16 the article she published, she used that preparation method, but
17 she paired it with the polarized light microscope; is that
18 right?
19 A That's right.
20 Q And your study of those 30 products we talked about
21 earlier, you paired that preparation method with a TEM
22 microscope; is that right?
23 A Correct. As it turns out the 22262-2 is the exact same
24 method.
25 Q Right, that ISO standard?

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1575

1 A That ISO standard for heavy liquid density.
2 Q And now we get to the analysis of these ten products.
3 And did you use both a TEM and a polarized light microscope,
4 both methods, and also used the Blount method as well?
5 A Correct. All ten samples were analyzed using three
6 different analytical methods. Heavy liquid density TEM, heavy
7 liquid density PLM, Blount method, and the ISO 22262-1 polarized
8 light microscopy, no heavy liquid separation.
9 Q And in terms of the type of asbestos that was found in
10 seven out of these ten containers of Johnson & Johnson baby
11 powder from Johnson & Johnson, what types of asbestos do we have
12 identified by Material Analytical Services?
13 A We found both tremolite, actinolite solid solution
14 series, as well as anthophyllite, depending on which method.
15 Q And I see we have a range of concentrations in terms of
16 fibers per gram. And then the aspect ratios. What about these
17 results is consistent or not with the earlier testing you had
18 done on the 30 containers that have been sent to you by law
19 firms?
20 A Depending on the mine, it's all consistent. In the
21 earlier testing, I think we had one sample that was -- one or --
22 one sample from Vermont, and we found anthophyllite solid
23 solution series for that sample. The rest of them were
24 primarily from either from China or Italy. All the Italy ones
25 were tremolite. So we are finding consistency the same

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1576

1 concentration, some lower, same types of asbestos. It's all
2 consistent.
3 Q So, for example, the jury has seen a reports from
4 Batelle, from the 1950s, finding tremolite in Italian talc, and
5 what type of asbestos were you finding in the products with
6 Italian talc mostly?
7 A Primarily tremolite and a couple of richterite fibers,
8 but primarily tremolite.
9 Q And the jury has seen documents identifying fibrous
10 anthophyllite in the Vermont talc mines, and were you finding
11 anthophyllite asbestos in containers of Johnson's baby powder
12 that used Vermont talc?
13 A Both anthophyllite, as well as tremolite and
14 actinolite. So we are finding the same types of asbestos.
15 Q Let's take a look at the -- since you did polarized
16 light microscopy, let's look at some of that, because we haven't
17 seen pictures of that.
18 Is this an example of an actinolite, tremolite asbestos
19 particle that Material Analytical Services identified by
20 polarized light microscopy using the Blount preparation method?
21 A Yes.
22 Q Can you tell us about this picture and what it shows
23 us?
24 A This is on the dispersion staining, and the polarized
25 light. And you say staining, but there is no stain put on it.

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1577

1 It's actually the light.
2 And when dispersion staining, when you have the
3 particle, which has a similar refractive indices to the medium,
4 you have it in there. In this case we are using 1.605. The
5 light is literally bent around the bundle here. So that's why
6 you have such brightness on the outside.
7 And then this is in parallel. So you can then look at
8 charts and find out what the refractive indices is by the wave
9 length or vibration of light coming through, and the color.
10 So we go -- that's perpendicular -- or parallel, excuse
11 me. And the next one should show it -- this is 90 micrometers
12 long. The individual fibers that are in this bundle, it's a
13 little hard to see with my glass, are approximately about point
14 two to point five. The aspect ratio of the individual fibers in
15 this bundle are all over a hundred to one. So even the criteria
16 of one to 20 to 101. Every one that we have analyzed using
17 polarized light has met that criteria.
18 Q Just for the record, the range of the concentrations of
19 asbestos in the seven out of ten are about 22,000 fibers --
20 about 12,000 fibers per gram all the way up to 63,000 fibers per
21 gram?
22 A By TEM, yes.
23 Q How about one that was identified by PLM only. How do
24 you determine -- do you determine concentration to that?
25 A No the PLM method is by weight percent. So all our PLM

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1578

1 methods which are positive has a weight percent associated with
2 it. That particular one was negative by TEM and positive by
3 PLM.
4 Q Can you explain to the jury, they heard so much about
5 the TEM microscope being the more sensitive analytical tool.
6 How can you explain that in one of the ten samples you found
7 asbestos by PLM but not TEM?
8 A The TEM is very sensitive for a certain range of fibers
9 and bundle size. PLM -- TEM cannot find these really big
10 bundles. You saw it up there. It was almost 90 micrometers
11 long. That does not show up on TEM analysis. It's too big, on
12 the grid on the filter. So there's two different sized ratios
13 here. These very large bundles, as well as the finer smaller
14 individual fibers. TEM is the most sensitive technique, but to
15 analyze these samples you need all three of these if you want to
16 understand what is there and have the best potential for finding
17 positives.
18 PLM looks like a lot more area, a lot bigger sample.
19 It's a needle in a haystack effect. And occasionally that will
20 happen. You'll find it by PLM, but not by TEM. However,
21 percentage-wise, TEM has the highest ratio as positives as
22 compared to the others?
23 Q Let's just may I ask you about a few other pictures?
24 (Whereupon, a demonstrative aid was shown on the
25 screen.)

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1579

1 A So this is the same fiber, same bundle. Now it's in
2 perpendicular dispersion. You notice that it reduces in
3 intensity and goes to kind of a more goldish orange versus the
4 other one which was more brighter. That gives you the
5 indication, okay, it's going to be actinolite, tremolite.
6 Sometimes you get anthophyllite the same dispersion, but you do
7 additional things to ferret those two out.

8 MR. BROCK: For the record, that is 69042. Do you
9 need all the numbers in the middle, also, to identify it, or
10 is it just 001, M69042001BL-001.

11 Q And Dr. Longo, it looks like the very next one is -- is
12 this the same particle asbestos from that sample of Johnson &
13 Johnson baby powder?

14 A Yes. If you go back to the previous one, you'll notice
15 that there seems to be a faint outline around the bottom of that
16 bright area, that bright fiber. You see that bluish outline?
17 That is actually a talc particle.

18 If you go to the next, this has -- they call a
19 retardation plate, where the light vibrating through there, I
20 think it's a 530 nanometers, that talc in this mode will always
21 be this bright blue like this.

22 And then you have the elongation. And you could
23 actually see some of the fibers that are in there better. So
24 that is the elongation which would be positive.

25 Q And Dr. Longo, how do you know like what color it's

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1580

1 supposed to be. Where -- how do you know that?

2 A First you have to have a very experienced analyst and
3 see they are using a refractured fluid of 1.605, and for these
4 different things you actually have a chart of wavelengths, light
5 wavelengths for these different refractured indices you are
6 putting in there. And you could actually pick it off the chart.

7 It takes a lot of experience do this analysis, but that
8 is the common protocol.

9 MR. BROCK: Go back. I want to make sure I have it
10 for the record.

11 MR. BLOCK: It was the same particle.

12 MR. BROCK: 042 has the purple, blue.

13 (Whereupon, a demonstrative aid was shown on the
14 screen.)

15 Q The next one, the same particle but just different
16 color?

17 A It's same particle. Now we are in the crossed polars
18 where we have the polarizer in and the analyzer. Polarizer is
19 going this way and the analyzer is this way, so you are reducing
20 a lot of straight light going everywhere, like polarized
21 sunglasses. So it's only coming in one direction. And it shows
22 you very clearly how if you look at that structure, the goldish
23 yellow structure which has been identified as actinolite,
24 tremolite, you could see the individual fibers in that bundle.

25 Q So those pictures that we just looked at, is that

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1581

1 asbestos as seen under the polarized light microscope in
2 Johnson's Baby Powder that you tested?

3 A Yes.

4 Q In terms of the patterns of the asbestos and the test
5 that show you that is asbestos, is there any difference about
6 the asbestos that you are finding in Johnson's baby powder and
7 the asbestos you've found when you've done product testing over
8 many decades?

9 A No. It's not -- the type of asbestos in the products,
10 but you'll find these accessory, actinolite, anthophyllite. And
11 mostly where we see anthophyllite was in industrial talcs, which
12 are used in the products and is one of the things we used to ID
13 the products. I could give you an example.

14 Q Okay. Do you have an example?

15 A Yeah. I was afraid to just keep talking.

16 Q Go ahead.

17 A U.S. Gypsum Audocare is an acoustical plaster
18 manufactured by U.S. Gypsum with asbestos, and it had ten
19 percent chrysotile, 60 percent perlite, it had ten percent
20 fibrous talc from the Governor Mines up in New York,
21 international talc. And the signature on that talc was it had a
22 lot of anthophyllite and fibrous. So we would look for that to
23 ID that product. And it had bentonite clay. So we would use it
24 as part of the ID process, because none of the manufacturers
25 used fibrous talc from the Governor mine in New York.

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1582

1 Q Was the anthophyllite asbestos you found in that
2 product essentially the same as the anthophyllite asbestos you
3 found in Johnson's baby powder?

4 A We didn't identify it any different way back in the
5 '90s when we were doing that than we are doing today doing
6 product ID.

7 It had the -- it met the criteria for length,
8 refraction, chemistry, parallel sides. We were doing the exact
9 same thing in the '90s, all through the '90s, that we are doing
10 today with the cosmetic talc. We are identifying asbestos.

11 Q And over the years have you found tremolite asbestos as
12 a contaminant of chrysotile asbestos?

13 A It's an accessory mineral.

14 Q When you find tremolite asbestos as a contaminant in
15 chrysotile asbestos, is it essentially the same as the tremolite
16 asbestos that you are finding in Johnson & Johnson's talcum
17 powder products?

18 A The chemistry, everything is the same. It meets the
19 counting criteria.

20 Q Okay.

21 And we don't have to go through all of these, but do we
22 have some pictures of anthophyllite asbestos in the Johnson's
23 baby powder containers M69042-001-004. Can you see that there?

24 A Yes.

25 Q And is that anthophyllite asbestos in Johnson's baby

Dr. Longo - Plaintiff - Direct (Mr. Block)

Page 1583

1 powder?
2 A It is. It's a fiber -- it has an aspect ratio of ten
3 to point two. So that would be an aspect ratio of 50 to one.
4 So it clearly meets -- it equals or meets the five to one
5 counting rule when it's 50 to one.

6 Q All right. I don't want to go through all the
7 pictures, but let me ask you about this one, M69042-002. You
8 are testing from another Johnson & Johnson baby powder container
9 that came from Johnson & Johnson.

10 Can you explain to us this photograph and how there is
11 an arrow, it says talc, and an arrow that says anthophyllite?

12 A Yes, this was one where the analyst found
13 anthophyllite, and then when I was reviewing the data I said,
14 "What's this?"

15 "That is talc."

16 Well, prove it, and he went back and proved it. So we
17 have two talc fibers aligning the anthophyllite fiber, so the
18 dark one is anthophyllite and the lighter is talc fibers.

19 Q So this fiber that's below the darker fiber, is that
20 talc?

21 A It is.

22 Q And the one above is anthophyllite?

23 A Correct.

24 Q And you're finding that in Johnson's baby powder?

25 A We found fibrous talc in a number of these samples.

Page 1584

1 Q And what is the difference between the talc fiber and
2 anthophyllite asbestos in the Johnson's baby powder?

3 A Well, one is a regulated asbestos and the other one is
4 not. Talc has pretty much the exact same chemistry as
5 anthophyllite so that you have to do a little -- so to
6 distinguish them apart, one, you do defractions, also known as
7 selected area electron defraction, where initially you start out
8 -- your asbestos fiber is perpendicular, laying zero degrees on
9 the TEM. You get a defraction pattern. Then you tilt the whole
10 goniometer, or the whole sample, until you get a second
11 defraction pattern, meaning another orientation of the crystal
12 and it will be different.

13 (Continued on the next page.)
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Page 1585

Direct-Longo-Block

1
2 A. Talc on the other hand, you get this you sudo
3 hexagonal pattern looking thing. And if you rotate it, it
4 never changes. It stays the same time after time. That's
5 how we distinguish between the two.

6 MR. BROCK: I'm sorry. Could I see the one?

7 MR. BLOCK: Which one?

8 MR. BROCK: That's fine. I'll look at them
9 later.

10 Q. Let's go to another subject, which is have
11 you reviewed the 1991 article by Dr. Alice Blount, that's
12 in evidence as Exhibit 11 and 12, have you reviewed that
13 to determine whether what you found in Johnson's Baby
14 Powder is consistent with Dr. Blount's findings?

15 A. Yes.

16 Q. And have you also reviewed the key, the
17 handwritten key which is Exhibit 12, which identifies
18 Sample I as Windsor J & J, JBP, have you reviewed that?

19 A. I have.

20 Q. Have you reviewed another key that Dr. Blount
21 September to Cyprus that identifies sampling Windsor,
22 Vermont baby powder?

23 A. I have reviewed that.

24 Q. And if you look at Sample I that's identified
25 as Johnson's Baby Powder and those keys, how if at all are
26 your findings of asbestos consistent or inconsistent with

Page 1586

Direct-Longo-Block

1 what Dr. Blount found in 1991?

2 A. She found primarily tremolite asbestos as she
3 called it. Most of the Vermonts we see are anthophyllite
4 with tremolite, actinolite. We do have one of the samples
5 close to that year that was all tremolite, exact same
6 thing she was finding.

7 Q. Dr. Blount found a long, thin tremolite
8 asbestos fibers that she calls needles and fibers. How
9 does that compare to what you found?

10 A. That's what we found. And her concentrations
11 are similar to what we're seeing. She reported it in
12 particles per milligram. We reported in fibers per gram.
13 And the only difference there is it's another unit. So,
14 if you multiply all those results by a thousand, you can
15 then compare hers fibers per gram to ours. So she had a
16 range of for I, 102,000 up to 341,000 asbestos fibers and
17 bundles of tremolite.

18 Q. And Dr. Blount did an analysis where she
19 charted the aspect ratios of the tremolite asbestos she
20 found, and she compared it to a publication by Campbell
21 from 1977. Is that right?

22 A. Yes, sir.

23 Q. And did Dr. Blount conclude from that that
24 Sample I was tremolite asbestos?

25 A. She did.
26

Page 1587

1 Direct-Longo-Block
2 Q. And have you, yourself, performed an aspect
3 ratio distribution calculation of the 304 asbestos
4 particles that the Material Analyst Service found in that
5 first 30 product test and charted it against Dr. Blount,
6 the 1977 Campbell article and the NIST tremolite amphibole
7 asbestos dimensions of that asbestos?
8 A. Yes, we did.
9 Q. All right. So, if we could follow this now.
10 Blount, okay, it says "Blount Sample I", is that in black?
11 A. Yes.
12 Q. All right. And then Campbell, which appears
13 in the article, she charted hers against Campbell, is that
14 in blue?
15 A. That's the blue one.
16 Q. Now we have black and blue (gesturing).
17 A. And that is what he called tremolite
18 asbestos.
19 Q. Okay. And then we have the NIST tremolite
20 amphibole asbestos. Is that the aspect ratio distribution
21 in blue for that one?
22 A. Correct.
23 Q. Red is what?
24 A. Red is all sizes that we found in -- in this
25 report (indicating). Not only the greater than five, but
26 we also went back and analyzed them to get all the sizes,

Page 1588

1 Direct-Longo-Block
2 the ones we normally don't report, less than five to one,
3 so that we could compare apples to apples. And so the red
4 goes -- The red line is all these particles all sizes that
5 still had the chemistry of tremolite. Still had the
6 crystalline structure of tremolite. And we look at where
7 we have our highest peak. All of them, mine, RMAss, RIST,
8 what Blount found in that 1990 sample off the shelf of
9 Johnson's Baby Powder as well as Campbell's data showing
10 this is the average aspect ratio of asbestos tremolite,
11 they all line up.
12 Q. Okay. And if we follow the X axis and the Y
13 axis, let me ask you if a few things are true. Is it true
14 that in all of them, approximately 30 to 40 percent of the
15 aspect ratio of the asbestos is at least ten to one?
16 A. Correct.
17 Q. All right. And then if we go to 20 to one,
18 it looks like between 20 and 30 percent of each has aspect
19 ratios of 20 to one, is that right?
20 A. Correct.
21 Q. And I think Dr. Blount showed in her study
22 that if it was not asbestos, you would see the peak over
23 here (gesturing), in the upper left, is that right?
24 A. Correct. What she called cleavage fragments.
25 The 70 percent of what she called cleavage fragments had
26 aspect ratios about one to one to two. So, it was chunks

Page 1589

1 Direct-Longo-Block
2 not fibers.
3 Q. Now is this sort of aspect ratio distribution
4 graphing is this required by AHERA, the AHERA accounting
5 protocol method?
6 A. No.
7 Q. All right. Why do you do it anyway?
8 A. Because I was interested to see how our
9 results compared to Dr. Blount's results and compared to
10 Campbell's results as compared to NIST to try to
11 understand how folks were saying this is not asbestos.
12 It's not asbestiform. And the thing about it is
13 tremolite, anthophyllite by their materials and their
14 chemistry are brittle. They are not flexible. These
15 materials are milled. So, they are breaking up. And all
16 these samples have all been milled, either the Johnson &
17 Johnson material, Blount's material, Campbell ground his
18 and NIST ground theirs. So, it all matches.
19 Q. Dr. Longo, let me show you another part of
20 Exhibit 4, which is in evidence. This is Johnson &
21 Johnson's TEM method TM 7024. And I want to ask you about
22 a section that says that the detection of five or more
23 asbestiform minerals of one variety in an analysis
24 constitutes a quantifiable level of detection. Do you see
25 that?
26 A. I do.

Page 1590

1 Direct-Longo-Block
2 Q. The jury has seen some testing that uses the
3 term nonquantifiable. Dr. Longo, in your experience in
4 testing materials for asbestos, do you have a number of
5 asbestos fibers that you have to find before you report it
6 or do you have this five fiber minimum rule that's in TM
7 number 7024?
8 A. Well, we do have a number we have to find
9 before we report it.
10 Q. What's that number?
11 A. One.
12 Q. Why are you reporting everything you find
13 when you're testing a material for asbestos?
14 A. Because that's how you do this. You should
15 always report what you find. You can argue about it later
16 that it's asbestos or nonasbestos, but you should report.
17 All these methods tell you to report it, what you have.
18 Not not report it. The 22262 method ISO method says it's
19 detection limit is one fiber or one bundle. You always
20 report it.
21 Q. Throughout your career analyzing materials
22 for asbestos for over 30 years, have you been reporting
23 what you find?
24 A. Fine. It's either non detect one or more.
25 Q. Dr. Longo, it also says here in the Johnson &
26 Johnson method that you can only spend two hours analyzing

Page 1591

1 Direct-Longo-Block
2 a sample, a talc sample for asbestos by TEM. Is that
3 acceptable in your opinion?
4 A. No. You can't do an adequate analysis in two
5 hours. We look at a hundred grid openings. If there is
6 nothing present, meaning it's a non detect, it still takes
7 four to five hours of transmission electron microscopy
8 time to do a thorough analysis. That one we looked at
9 that was 14 million, that analysis took three days. So,
10 we do not -- we do not tell the analyst you only get this
11 much time to do this. We want a thorough analysis and a
12 careful analysis.
13 Q. Dr. Longo, have you being familiar with
14 Johnson & Johnson's testing method 7024 and understanding
15 the rule in that testing method that it could be reported
16 at nonquantifiable unless you detect at least five
17 asbestos fibers of the same variety, have you calculated
18 the detection limit for Johnson & Johnson's TEM testing
19 methods 7024?
20 A. I have.
21 Q. And what is it?
22 A. For a single fiber it's approximately
23 12,000 -- Excuse me -- 12 million fibers or bundles per
24 gram to find one fiber. So, you have to have at least
25 that concentration to find one fiber. Now for them to
26 make it quantifiable, you have to have five of those

Page 1592

1 Direct-Longo-Block
2 fibers. So, if you take five of those fibers, it has to
3 be all tremolite. So five of those, if you have four, you
4 get approximately 56 million. It has to be higher than 56
5 million fibers and bundles per gram for you to say that is
6 countable. Now, it's probably never happened, but if you
7 have four tremolite --
8 MR. BROCK: Your Honor, it's never happened,
9 I object to it. He said it probably never happened.
10 THE COURT: Sustained.
11 Q. Well, in calculating a limit of detection,
12 are you looking at all possibilities?
13 A. Yes. If you have four tremolite --
14 THE COURT: That would be yes.
15 THE WITNESS: Yes.
16 Q. Okay. If you calculated the limit of
17 detection for Johnson & Johnson TEM 7024 test method,
18 assuming that there were four asbestos fibers of four
19 different varieties found --
20 MR. BROCK: Objection. He's assuming
21 something that the expert has said is not probable.
22 THE COURT: Finish your question.
23 Q. Have you calculated that detection limit?
24 A. Yes.
25 Q. What is it?
26 MR. BROCK: Same objection. He had an

Page 1593

1 Direct-Longo-Block
2 assumption in the question that the expert has said
3 is not probable.
4 THE COURT: Please repeat his original
5 question.
6 (Whereupon the above-requested testimony was
7 read back.)
8 THE COURT: Overruled.
9 A. I have.
10 Q. And what is that detection limit?
11 A. A quarter of a billion fibers per gram.
12 Q. Just to be clear. If we start with tremolite
13 asbestos, which you have found in Johnson's Baby Powder,
14 according to Johnson & Johnson's method, if they find four
15 tremolite asbestos fibers in a sample, what would the
16 concentration of asbestos in that sample be if you find
17 four tremolite asbestos fibers?
18 A. Fifty-six million.
19 Q. Okay. But under the Johnson & Johnson test
20 method, would that be nonquantifiable?
21 A. According to their method, yes.
22 Q. You have found actinolite asbestos in
23 Johnson's Baby Powder, correct?
24 A. Yes.
25 Q. And if you found four tremolite and four
26 actinolite asbestos fibers in Johnson's Baby Powder, what

Page 1594

1 Direct-Longo-Block
2 what would the concentration be?
3 MR. BROCK: Your Honor, again there is an
4 assumption in the question that the expert has said
5 is not probable. So, I object to it on that basis.
6 Now adding different fibers, different hypotheticals.
7 MR. BLOCK: I think we have covered it, your
8 Honor. I can move on.
9 Q. Have you calculated --
10 THE COURT: Sustained.
11 Q. Are you familiar with --
12 THE COURT: We're almost done though.
13 MR. BLOCK: Sure. Can I finish this slide,
14 your Honor?
15 THE COURT: Yes. Please don't go past 4:30.
16 MR. BLOCK: I certainly will not.
17 THE COURT: Thank you.
18 Q. Are you familiar with the work of Dr. Matthew
19 Sanchez of the RJ Lee Group who has analyzed samples of
20 Johnson's Baby Powder in litigation?
21 A. Yes.
22 Q. And have you looked at Dr. Sanchez's test
23 method for TEM analysis and analyzed what the detection
24 limit is?
25 A. Yes.
26 Q. What is the detection limit of Johnson &

Page 1595

1 Direct-Longo-Block
2 Johnson's expert witness, Dr. Matthew Sanchez, what's the
3 detection limit of his method for detecting asbestos in
4 Johnson's Baby Powder?
5 A. It originally was 14,000,500. The last set
6 of analysis I've looked at, they have increased their grid
7 openings. It looks like it's now about approximately 1.5
8 to 2 million fibers per gram.
9 Q. So, it used to be 14,500,000. And then they
10 increased the number of grid openings they were looking at
11 and now it is what?
12 A. Approximately 1.5 to 2 million. 1.5 million
13 to 2 million.
14 Q. All right. I think earlier you said that the
15 Material Analytical Services TEM method, with heavy liquid
16 separation, I think you said around 3,500 or 3,000?
17 A. That's what we're now approaching.
18 Ultimately our goal is to get down to approximately a
19 hundred.
20 Q. Can you explain to the jury why your limit of
21 detection for analyzing Johnson's Baby Powder or talc for
22 the presence of asbestos is so much lower than the Johnson
23 & Johnson's method and Dr. Sanchez's method?
24 A. Actually it's so much higher. It's kind of
25 reverse for one simple reason. We're using the heavy
26 liquid separation method published by Alice Blount in 1990

Page 1596

1 Direct-Longo-Block
2 and looked at by Johnson & Johnson in the early 1970s.
3 It's nothing magical. It's not the Longo or MAS heavy
4 liquid method. It's just standard protocol.
5 MR. BROCK: Objection. Move to strike. Way
6 beyond the question.
7 MR. BLOCK: Your Honor, that was the answer.
8 Could we have a read back? It was responsive.
9 THE COURT: All right. Let's have a read
10 back with the question please and the answer.
11 (Whereupon the above-requested testimony was
12 read back.)
13 THE COURT: That's it. Right to that point.
14 Not a word past it. Strike it from your minds.
15 MR. BLOCK: All right.
16 THE COURT: I'm asking you, doctor, again,
17 don't add to your answer, please.
18 THE WITNESS: I'm sorry, your Honor. I get
19 carried away. I understand.
20 THE COURT: There is no need to apologize.
21 Q. Dr. Longo, so the detection limit, yours
22 being around 3,000 or 3,500 fibers per gram, compared to
23 Johnson & Johnson 7024 method, whose detection limit is
24 more sensitive or can better able -- can better identify
25 asbestos in talc?
26 A. Well, the heavy liquid method separation. So

Page 1597

1 Direct-Longo-Block
2 the standard separation that we're using.
3 Q. Okay. And just to be clear. Johnson &
4 Johnson's TEM test method 7024 used the heavy liquid
5 separation method?
6 A. I'm sorry?
7 Q. Does the Johnson & Johnson TEM --
8 A. It does not.
9 Q. It does not?
10 A. I thought you said did they.
11 THE COURT: Why don't you repeat your
12 question.
13 Q. Just a few more questions for today, Dr.
14 Longo. Does the Johnson & Johnson 7024 TEM test method
15 use the heavy liquid separation method?
16 A. No, it doesn't.
17 Q. Does it use any concentration technique?
18 A. No.
19 Q. Does Dr. Sanchez's method use the heavy
20 liquid separation method?
21 A. It does not.
22 Q. Does it use any concentration technique?
23 A. No.
24 Q. And is that the primary reason why your
25 method is so much better able to identify asbestos in
26 talc?

Page 1598

1 Direct-Longo-Block
2 MR. BROCK: Asked and answered. Leading.
3 Objection.
4 THE COURT: Sustained as to the very last
5 question.
6 MR. BLOCK: Okay.
7 Q. Just to sum it up, what if anything do you
8 attribute the greater sensitivity of your method in
9 testing talc for asbestos?
10 MR. BROCK: Asked and answered several times.
11 Objection.
12 THE COURT: You may answer that one.
13 A. Removing the talc and concentrating the
14 amphibole asbestos so that we don't have to look at huge
15 numbers of grid openings.
16 MR. BLOCK: Those are all the questions I
17 have today, your Honor. It's 4:30. Thank you.
18 THE COURT: Thank you very much. Members of
19 the jury, you will now be excused until tomorrow
20 morning at 9:30. I really want to emphasize once
21 again that if you happen to hear anything on TV or
22 radio or in the newspaper or on the internet about
23 this case or anything related to this matter, you
24 must immediately disassociate yourselves from it. If
25 you've seen or heard anything, please report that
26 immediately to the Court. Keep an open mind. See

1 Direct-Longo-Block
2 you tomorrow morning. Thank you so very, very much.
3 COURT OFFICER: All rise. Jury exiting.
4 (Whereupon the jury panel departed the
5 courtroom.)
6 THE COURT: Thank you so much. See you
7 tomorrow.
8 (Whereupon the proceedings were adjourned to
9 February 26, 2019 at 9:30 a.m.)
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	1561:11;1589:4	1451:6;1518:17,17;	1458:6;1464:23;	Allison (1)
\$	Accreditation (2)	1531:10	1489:24;1494:14;	1455:25
	1491:9;1493:8	additional (2)	1545:6	allow (2)
\$30 (1)	accurate (1)	1549:7;1579:7	agree (8)	1429:3;1519:20
1498:23	1534:5	address (1)	1422:2;1453:5;	allowed (2)
\$550 (1)	achievable (1)	1474:7	1456:19;1522:8,10,11;	1452:19;1464:11
1497:24	1420:18	addressed (1)	1559:17;1561:20	allows (3)
\$750,000 (1)	acid (1)	1563:26	agreed (1)	1504:8;1514:14;
1505:10	1476:17	adequate (1)	1550:17	1515:6
\$8 (1)	acoustical (2)	1591:4	agreeing (2)	alloyed (1)
1427:12	1486:24;1581:17	adequately (1)	1460:8,8	1475:26
	acoustics (3)	1447:21	agreement (1)	alloys (1)
A	1430:17;1473:2;	adjourned (1)	1485:10	1476:24
	1475:8	1599:8	agreements (1)	almost (15)
abated (1)	acronyms (1)	Administration (1)	1418:5	1450:5;1502:7;
1487:25	1477:20	1556:15	agrees (1)	1503:1;1504:24,24;
ability (7)	across (7)	admissible (1)	1544:26	1508:24;1509:3,4;
1425:13;1426:2,4;	1459:6,8;1501:16;	1422:7	ahead (7)	1520:7;1522:17;
1454:12,14;1500:12;	1507:12;1539:25;	admits (1)	1492:2;1496:14;	1533:7;1548:16;
1526:13	1548:9;1550:19	1456:13	1501:9;1502:18;	1551:12;1578:10;
able (28)	Act (1)	admitted (3)	1539:19;1551:10;	1594:12
1449:17;1453:11;	1491:16	1447:8;1460:18;	1581:16	along (3)
1456:18;1466:21,22;	actinolite (29)	1479:18	AHERA (6)	1430:9;1498:1;
1467:22;1473:12;	1465:6,8;1496:9;	adopted (1)	1491:15,21;1556:6;	1549:14
1477:23;1482:12;	1526:22;1527:22,25;	1485:3	1560:24;1589:4,4	alternate (1)
1486:16;1487:1;	1539:1;1553:6,8,10,12,	adult (2)	aid (7)	1430:3
1489:22;1497:17;	13;1554:21,22;1555:4,	1428:3;1460:24	1524:13;1566:2;	although (1)
1507:19;1513:18;	15;1559:12;1560:3,3,	advance (2)	1568:1;1570:2;	1573:16
1517:17,18;1518:22;	8;1575:13;1576:14,18;	1421:15,21	1572:13;1578:24;	aluminum (2)
1536:9,15,25;1546:5;	1579:5;1580:23;	advances (1)	1580:13	1475:13,26
1551:8;1563:16;	1581:10;1586:5;	1476:8	AIDS (2)	always (10)
1565:9;1573:20;	1593:22,26	advertised (1)	1489:7,8	1468:13;1493:8;
1596:24;1597:25	actual (8)	1496:16	AIHA (3)	1534:6;1537:9;1542:6;
above (3)	1420:3;1487:13;	affect (3)	1481:17,23;1483:3	1544:16,17;1579:20;
1537:3,3;1583:22	1488:9;1514:7;	1448:3,10,11	air (14)	1590:15,19
above-requested (2)	1530:20;1533:19;	afraid (1)	1462:12;1469:4;	ambient (1)
1593:6;1596:11	1543:19;1568:7	1581:15	1479:26;1484:2;	1560:25
absolutely (1)	actually (34)	afternoon (14)	1490:15,16,17;	American (4)
1542:10	1452:10,13;1459:18;	1419:4,5,25;	1491:16,21;1492:4;	1481:20;1484:9;
absorbs (2)	1460:17;1461:21;	1426:20;1449:8,10;	1494:2;1497:16;	1491:8;1492:3
1489:15;1503:9	1467:24;1475:25;	1472:11,12,13,14;	1560:25;1569:20	among (4)
accept (3)	1489:8;1491:24;	1473:9,12;1524:4,6	aired (1)	1467:19,19;1531:13;
1471:3,4,5	1495:11;1504:6;	again (22)	1446:15	1532:10
acceptable (1)	1506:24;1507:16,23;	1425:2;1427:6;	airs (2)	amosite (1)
1591:3	1508:12;1510:23;	1454:2,6;1460:8;	1446:22,23	1559:11
accepted (2)	1515:24;1518:12,13;	1461:11;1481:4;	alarmed (2)	amount (19)
1534:24;1558:12	1522:19;1533:18;	1482:15;1484:13;	1426:7;1448:6	1462:10;1467:17;
access (1)	1548:19,24;1552:4,8,	1494:22;1503:13;	alert (2)	1468:2,2,19;1496:23;
1570:5	21;1553:18;1565:24;	1521:11;1547:17;	1420:15;1421:2	1498:15;1499:6;
accessory (3)	1577:1;1579:17,23;	1550:5;1551:18;	Alice (2)	1519:8,12;1520:6,15,
1555:22;1581:10;	1580:4,6;1595:24	1553:12,26;1555:12;	1585:11;1595:26	17;1534:23;1535:18;
1582:13	ad (1)	1562:14;1594:3;	aligning (1)	1550:10;1553:22,22;
accommodate (4)	1475:13	1596:16;1598:21	1583:17	1567:17
1472:6;1473:12,19,	AD2d (1)	against (5)	alive (1)	amounts (1)
20	1429:13	1495:8;1569:16,19;	1460:21	1522:16
according (6)	AD3d (2)	1587:5,13	allegations (1)	amphibole (15)
1460:9;1463:11;	1427:10;1429:22	agencies (3)	1451:5	1467:20;1514:25;
1538:9;1559:24;	add (1)	1488:19,21;1499:2	alleged (2)	1515:26;1517:3,13,19;
1593:14,21	1596:17	agenda (1)	1459:16,24	1518:5;1519:22;
accountable (3)	adding (1)	1417:7	alleges (1)	1520:13;1542:9;
1556:24;1557:10;	1594:6	agents (1)	1459:22	1543:23;1559:11;
1564:3	addition (6)	1492:23	Allen (2)	1587:6,20;1598:14
accounting (2)	1428:9;1431:4;	ago (5)	1427:21,21	amphiboles (7)

February 25, 2019

1517:16;1518:9; 1519:18;1522:7; 1560:11,21;1561:19 analyses (1) 1524:24 analysis (36) 1463:17;1464:8,9; 1491:7,21;1492:8; 1519:13;1520:26; 1522:2,8;1524:22; 1528:10;1529:8; 1535:4,15;1540:1; 1541:7;1545:7;1547:6; 1548:12;1550:7; 1554:12;1557:25; 1566:25;1575:2; 1578:11;1580:7; 1586:19;1589:23; 1591:4,8,9,11,12; 1594:23;1595:6 analyst (6) 1533:19;1534:1; 1580:2;1583:12; 1587:4;1591:10 analysts (4) 1493:2;1545:9,13,14 Analytical (30) 1478:5,8,17; 1479:24;1498:1,16; 1499:4,10;1505:4; 1510:18;1513:5,24,25; 1514:3,12;1519:23; 1525:14,18;1526:2; 1533:6,9;1537:9; 1544:5;1556:25; 1560:13;1575:6,12; 1576:19;1578:5; 1595:15 analyticals (1) 1518:22 analyze (14) 1477:19,26;1480:22; 1488:12;1504:14; 1517:17;1519:9; 1520:18;1535:16; 1541:1;1545:14; 1566:24;1568:14; 1578:15 analyzed (13) 1493:6;1507:16; 1514:4;1526:11; 1535:10;1566:18,19; 1567:13;1575:5; 1577:16;1587:26; 1594:19,23 analyzer (2) 1580:18,19 analyzes (1) 1480:15 analyzing (16) 1477:14;1479:7,25; 1480:10,14;1491:16; 1511:9;1512:18;	1521:13,22;1522:13; 1535:5;1545:15; 1590:21,26;1595:21 Angeles (2) 1478:10;1494:24 animation (1) 1517:21 annexed (1) 1462:6 anniversary (3) 1498:22;1566:10,10 answered (2) 1598:2,10 anthophyllite (49) 1465:6,7;1514:26; 1526:25,25;1527:1,3,4, 4,6,6,20;1538:12; 1552:23;1553:3; 1559:11,20;1560:6,9,9; 1571:13,21,23;1572:1, 16,22,24;1575:14,22; 1576:10,11,13;1579:6; 1581:10,11,22;1582:1, 2,22,25;1583:11,13,17, 18,22;1584:2,5; 1586:4;1589:13 anticipation (1) 1482:4 anymore (2) 1452:7;1486:7 apart (1) 1584:6 apologize (1) 1596:20 Apparently (1) 1425:16 Appeals (1) 1418:15 appears (1) 1587:12 Appellate (2) 1417:10;1429:14 apples (2) 1588:3,3 applicable (1) 1470:3 application (7) 1459:15,17,22; 1461:1,12;1462:3,9 applied (6) 1463:15;1468:17,18; 1469:3;1477:7;1525:6 apply (1) 1509:16 applying (2) 1447:9;1468:4 approach (3) 1517:8;1532:14,22 approaching (2) 1518:26;1595:17 appropriate (1) 1563:22 approximate (1)	1519:12 approximately (25) 1479:23;1494:10; 1496:1;1498:23; 1518:2;1519:5; 1527:14;1531:18; 1532:3,3,8;1534:15; 1535:22;1538:1; 1540:12;1542:5; 1554:4;1555:15; 1577:13;1588:14; 1591:22;1592:4; 1595:7,12,18 arbitrary (1) 1542:4 architect (1) 1484:20 area (19) 1447:10;1462:13; 1468:4;1474:17,20; 1484:25;1489:24; 1490:19;1494:3; 1535:5,7,10;1538:19; 1547:21;1549:5; 1550:7;1578:18; 1579:16;1584:7 areas (1) 1447:17 arguably (1) 1450:23 argue (7) 1456:18;1458:18; 1459:10,21;1461:7; 1470:2;1590:15 argues (1) 1572:6 arguing (2) 1456:4,7 argument (3) 1421:10;1426:10; 1471:9 argumentative (1) 1563:11 arguments (5) 1419:17;1421:13; 1424:18;1425:16; 1469:17 armed (1) 1490:16 arms (1) 1501:1 around (19) 1418:11;1450:16; 1479:9;1488:17; 1491:2;1495:2;1503:7; 1506:16;1512:6; 1515:17;1521:12; 1536:1;1550:2; 1562:10;1566:16; 1577:5;1579:15; 1595:16;1596:22 arrow (2) 1583:11,11	art (2) 1470:23;1499:10 article (7) 1467:13;1520:22; 1521:15;1574:16; 1585:11;1587:6,13 articles (3) 1482:24,26;1484:4 artificial (2) 1449:18;1475:17 artificially (1) 1489:14 asbestiform (13) 1456:8,14,16; 1457:10;1561:22,24, 25;1562:4,6;1572:7,9; 1589:12,23 asbestos (349) 1423:6,24;1447:18, 19,20;1456:10,16; 1457:4,9,12,15; 1461:17,18;1462:1,7, 10,12,18,21,23,25; 1463:1,21,23;1464:5,6, 7,9,10,12,16,16,17,22; 1465:4,4,11;1467:4,4, 5,9,10;1468:14; 1469:8;1470:7;1475:2; 1478:26;1479:2,7,22, 25;1480:7,10,14,15,22, 23,25;1481:6,9,19; 1483:6,13;1484:2,8; 1485:1,3,22;1486:1,4, 10,24;1487:7,8,11; 1488:1,2,5,22,24; 1490:5,11;1491:7,15, 25;1492:4;1493:6,15, 18,21,24;1494:7,7,10, 12,18;1496:4,23; 1497:4,10,14,17; 1499:2;1504:8,15; 1507:24,26;1508:9; 1509:5,9,13,16,18,20, 21;1512:18;1513:23; 1514:2,20,26;1515:7, 26;1517:3,8,19;1518:5, 9,23;1519:2,18,22; 1520:14;1521:10,14, 23;1522:3,14,17,22; 1524:10;1525:13,20; 1526:9,12,14,17,20; 1527:1,5,11;1528:5,7, 10,14,15,20,22,23; 1529:1,2,5,13;1534:11, 13,14,23,25;1535:9,18, 20,23;1536:5,8,15,16; 1537:1,2,15,17;1538:7, 10;1539:25;1540:3,14; 1541:5,5,8;1543:9,10, 25,25;1544:3,5,8,9,11, 18,25;1545:2,5,10,15, 24;1546:4,6,7,16,19, 22;1547:6;1548:3,7,12,	16;1549:18;1550:10, 11,20,23,26;1551:16; 1552:18,24,25;1553:6, 8,10,20,24;1554:13,13, 23;1555:6;1556:4,6,14, 22,24;1557:8,10,16,26; 1558:8,9,14,22;1559:2, 9,18,23,24;1560:13,22; 1561:5,6,16,17,19,26; 1562:3,7,8,9,24; 1564:2,3,4,8;1568:5,6, 6;1569:5,9;1571:13, 21;1572:1,6,16,22,24, 25;1573:21,24,25; 1575:9,11;1576:1,5,11, 14,18;1577:19;1578:7; 1579:12;1581:1,4,5,6, 7,9,18;1582:1,2,10,11, 12,14,15,16,22,25; 1584:2,3,8;1585:26; 1586:3,9,17,20,25; 1587:3,7,7,18,20; 1588:10,15,22; 1589:11;1590:4,5,13, 16,22;1591:2,17; 1592:18;1593:13,15, 16,17,22,26;1595:3,22; 1596:25;1597:25; 1598:9,14 asbestos/bundles (1) 1546:25 asbestos-containing (3) 1468:11;1486:5; 1490:10 aspect (32) 1456:25;1528:17; 1537:14,15,18,21,21, 24,25;1540:8,13; 1542:5;1546:23; 1548:16;1554:3; 1558:5,19,23;1561:14; 1564:7;1575:16; 1577:14;1583:2,3; 1586:20;1587:2,20; 1588:10,15,18,26; 1589:3 aspects (1) 1418:17 assessed (1) 1453:6 assessors (2) 1491:12,19 associated (2) 1461:6;1578:1 Association (3) 1481:20;1491:8; 1492:3 assume (1) 1550:22 Assuming (4) 1422:21;1470:21; 1592:18,20 assumption (2)
---	--	--	--	---

1593:2;1594:4 assurance (2) 1429:3;1448:4 assure (8) 1418:23;1425:2; 1431:9;1451:13; 1454:2;1565:4;1568:6, 17 ASTM (19) 1462:22;1484:7,8,9, 13,17,21;1485:4,18; 1493:15;1529:10,11; 1560:26;1561:3,4,8; 1564:4,9,13 Atlanta (3) 1420:17;1474:20; 1478:9 atom (1) 1504:6 atoms (1) 1543:21 attached (1) 1489:9 attend (1) 1472:2 attic (8) 1554:24,25;1555:2, 3,8,11,16,17 attorney (2) 1566:6,11 attorneys (2) 1483:7;1530:7 attribute (1) 1598:8 audience (1) 1431:3 audit (3) 1492:20,24,25 audits (2) 1492:11;1493:13 Audocare (1) 1581:17 August (6) 1462:2;1533:2,8,13; 1534:4,9 authored (1) 1462:22 authoring (1) 1485:2 Authority (2) 1487:19;1495:1 Authority's (1) 1488:8 available (3) 1420:17,24;1431:5 avenue (1) 1481:24 average (4) 1537:21,21,24; 1588:10 averaged (1) 1498:20 Avila (1)	1427:9 avoid (1) 1427:7 aware (3) 1521:7;1556:21; 1557:23 away (2) 1493:2;1596:19 awfully (1) 1417:21 axis (2) 1588:12,13 B Baby (73) 1424:10;1464:12,16; 1465:8;1466:7,16; 1468:4;1470:13; 1496:11,25;1509:12, 15,21;1514:19;1517:7; 1521:13;1522:21; 1528:5;1531:10; 1532:7;1534:10; 1538:8;1539:8,10; 1540:4,15;1544:6; 1545:5;1546:4,19; 1547:7;1550:12; 1551:15,17;1552:18, 24;1556:5,23;1557:9; 1558:26;1559:15,21; 1562:4;1564:2;1567:6, 20;1570:24;1571:14; 1572:1;1573:2,12,21; 1575:10;1576:11; 1579:13;1581:2,6; 1582:3,23,25;1583:8, 24;1584:2;1585:13,22, 25;1588:9;1593:13,23, 26;1594:20;1595:4,21 Bachelor's (1) 1477:6 back (40) 1418:13;1419:26; 1420:25,25;1427:2; 1428:4;1431:12; 1448:13;1453:21; 1454:25;1456:20; 1480:10;1485:17; 1487:17;1489:7; 1505:13,23,26;1506:8; 1507:25;1521:9,23; 1529:18,22;1530:2,6; 1531:18;1533:19; 1547:12;1551:5; 1557:14;1579:14; 1580:9;1582:4; 1583:16;1587:26; 1593:7;1596:8,10,12 back- (1) 1477:4 bacteria (1) 1496:21	bad (3) 1473:19;1490:20; 1513:25 balanced (1) 1450:23 balls (1) 1516:5 bankruptcies (1) 1490:4 based (19) 1418:26;1429:8; 1447:1;1448:6; 1449:22;1451:19; 1454:16,17;1456:25; 1457:2;1458:23; 1459:12;1467:26; 1468:14;1487:7; 1531:16;1536:23; 1562:8,24 basic (1) 1499:14 basically (2) 1487:3;1490:23 basis (2) 1458:24;1594:5 bat (1) 1450:1 Batelle (1) 1576:4 bathroom (2) 1511:17;1513:17 bathtubs (1) 1475:14 beam (10) 1489:23;1502:7; 1503:1,1,6,12;1504:10, 13;1508:22;1520:8 became (1) 1529:10 become (3) 1427:26;1481:22; 1521:7 becomes (1) 1426:26 bed (1) 1471:26 beer (1) 1475:23 begin (2) 1452:4;1570:6 begins (1) 1417:5 behalf (4) 1495:16;1498:20; 1499:6;1507:17 behavior (1) 1428:18 belabor (1) 1469:17 below (14) 1459:11,17;1462:3, 8;1467:16;1468:3,19; 1469:3,19;1470:2;	1513:17;1537:6; 1540:14;1583:19 benefit (1) 1518:19 bent (2) 1566:17;1577:5 bentonite (1) 1581:23 besides (4) 1455:4;1460:24; 1485:15;1522:23 best (13) 1425:13;1426:2,4; 1448:20;1449:9; 1452:18,18;1454:12, 13;1475:10;1476:23; 1499:21;1578:16 better (13) 1472:26;1489:4; 1491:18;1501:24; 1512:22,23;1513:5; 1515:23;1534:19; 1579:23;1596:24,24; 1597:25 beyond (3) 1562:12,13;1596:6 bias (2) 1429:7;1430:5 biased (1) 1418:19 biases (2) 1451:16,17 big (10) 1500:13,14,15,16; 1503:14;1505:2,14; 1541:12;1578:9,11 bigger (3) 1460:19;1501:13; 1578:18 Bill (4) 1474:18;1492:23; 1497:24;1498:6 billion (1) 1593:11 billions (1) 1464:22 binocular (1) 1551:24 binoculars (1) 1505:18 biological (1) 1569:18 biologist (1) 1478:23 biology (1) 1499:23 biomaterials (1) 1475:16 bit (20) 1426:5,26;1428:2; 1430:16;1448:8,10; 1451:2,22;1452:3; 1473:18;1476:26;	1495:4;1504:18; 1538:23;1540:10; 1543:17;1554:16; 1555:21;1568:21; 1573:17 bit' (1) 1448:12 black (2) 1587:10,16 blank (18) 1432:4;1433:4; 1434:4;1435:4;1436:4; 1437:4;1438:4;1439:4; 1440:4;1441:4;1442:4; 1443:4;1444:1;1446:4; 1568:19;1569:4,5,10 blanks (11) 1568:3,4,8,10,11,12, 13,16;1569:2,8,11 blatant (1) 1469:26 blind (1) 1545:14 BLOCK (59) 1419:14;1420:7,12; 1421:9,14;1422:11,13; 1423:3,7,11;1425:18; 1426:11;1427:23; 1450:17;1461:15; 1463:7,14;1466:2,12; 1470:5,18;1472:14; 1473:23;1474:13; 1479:15;1501:3; 1502:15;1510:8,10,13, 16,21;1523:12;1524:6; 1532:22,25;1536:21; 1546:14;1547:14; 1552:16;1557:17; 1562:18,20;1563:12, 24;1566:1,23;1570:12, 15;1572:11;1580:11; 1585:7;1594:7,13,16; 1596:7,15;1598:6,16 Blount (21) 1422:9;1467:9,12; 1517:14;1540:20; 1574:4;1575:4,7; 1576:20;1585:11,20; 1586:2,8,19,24;1587:5, 10,10;1588:8,21; 1595:26 Blount's (8) 1463:16;1520:22; 1521:14;1574:12,15; 1585:14;1589:9,17 blow (1) 1497:15 blue (11) 1480:9;1516:5; 1518:11;1565:13,13; 1579:21;1580:12; 1587:14,15,16,21 blueprint (1)
--	---	--	---	--

1423:8 bluish (1) 1579:16 board (2) 1485:17;1550:20 BOC (1) 1492:9 body (5) 1468:18,26;1475:17; 1497:3,7 bone (1) 1503:9 book (1) 1547:23 booking (1) 1420:25 books (2) 1532:20,25 borne (2) 1459:4,9 both (27) 1417:15,21,22; 1425:3;1426:25; 1427:13;1447:21; 1451:21;1452:12,16, 23;1454:3,19;1455:21; 1487:22;1491:7; 1514:3;1549:11; 1553:20;1555:23; 1560:25;1574:6,7; 1575:3,4,13;1576:13 bottle (10) 1459:3;1460:18,19, 20,22;1466:6;1516:4,6, 11;1555:13 bottles (14) 1457:24,25;1458:2, 3,4,7,12,13,13,21; 1459:5,6,8;1460:17 bottom (16) 1475:25;1499:25; 1506:9;1517:4;1518:9, 15;1519:17;1522:24; 1523:4;1528:1; 1540:16;1543:17; 1548:22;1549:12; 1552:11;1579:15 bought (5) 1466:16;1530:8,8; 1567:7,20 box (8) 1511:20;1512:8,10, 15;1513:13,16;1524:3; 1570:21 boxes (1) 1520:2 brand (2) 1469:10;1505:5 brand-new (1) 1529:25 break (3) 1523:13;1570:12; 1572:7	break-in (1) 1570:10 breaking (1) 1589:15 breathing (2) 1462:12;1468:26 bridge (1) 1476:22 brief (2) 1447:22;1456:2 briefly (1) 1469:14 bright (3) 1579:16,16,21 brighter (1) 1579:4 brightness (1) 1577:6 bring (9) 1417:9;1419:8; 1455:7;1471:22,24; 1472:17;1491:25; 1516:24;1536:9 brings (1) 1522:6 brittle (1) 1589:14 broadcast (4) 1447:15;1450:4,10, 12 BROCK (62) 1419:7,11,13,22; 1421:17;1422:5,10; 1423:13,16,20,25; 1424:6,14,17,20,22; 1425:26;1426:7; 1427:18;1446:11,14, 18;1447:5;1449:2,5; 1450:2,15;1455:24; 1479:17;1502:13; 1516:9;1521:18; 1526:3;1532:14,17; 1536:18,20;1546:9; 1547:11;1551:3; 1552:14;1557:14; 1560:15;1562:11,22; 1563:9,20;1566:20; 1568:20;1572:10; 1579:8;1580:9,12; 1585:6,8;1592:8,20,26; 1594:3;1596:5;1598:2, 10 brought (2) 1510:17,25 builder (1) 1495:25 building (8) 1484:20,23,23; 1486:4;1490:8; 1493:17,19;1498:4 buildings (7) 1480:23;1486:3,23; 1487:6,17;1488:17;	1495:2 built (1) 1520:7 bunch (2) 1458:4;1492:5 bundle (33) 1528:15;1533:19,20; 1534:2;1536:8; 1539:25;1548:8,18,26, 26;1549:23,24;1550:5, 11,14,16,21;1551:19, 22;1552:5,6;1553:11; 1572:5,6,9,20;1577:5, 12,15;1578:9;1579:1; 1580:24;1590:19 bundles (17) 1494:7,8;1518:26; 1519:6;1528:10; 1535:9;1537:23; 1538:4,10;1544:15; 1556:16;1571:22; 1578:10,13;1586:18; 1591:23;1592:5 business (3) 1422:4;1498:2,16 bypass (1) 1490:20	1568:11;1579:18 called (19) 1468:8;1479:4; 1480:9;1485:6;1494:1, 21,22;1515:8;1534:1; 1538:15,22,22; 1554:18;1557:4; 1564:7;1586:4; 1587:17;1588:24,25 calling (1) 1562:9 calls (5) 1473:24;1478:6; 1528:12;1529:13; 1586:9 calories (1) 1489:13 came (16) 1426:19;1447:12; 1453:11;1466:3; 1467:2;1469:20; 1475:23,26;1506:21; 1530:15,16,18; 1555:17;1568:7; 1570:24;1583:9 Campbell (6) 1467:13;1586:21; 1587:6,12,13;1589:17 Campbell's (2) 1588:9;1589:10 can (134) 1423:15;1424:25; 1425:2,13;1426:23; 1430:18;1448:6,15,25; 1452:15;1453:25; 1454:12;1470:5; 1471:3,4,4,20,23; 1474:16;1475:21,23, 24;1477:4;1478:2,15; 1480:5;1482:2,8; 1485:17;1491:4; 1494:15,16;1499:14; 1501:11;1504:2,5,9,14, 21,25;1505:5,18; 1506:2,3,3,4,7;1509:3, 7;1510:11,23;1511:8, 10,12,14,17,20,24,25; 1512:3,11,13,23; 1513:2,4,20,21; 1514:12;1515:18; 1516:22;1517:4,26; 1518:20,24;1519:2,8; 1520:13;1522:24; 1526:12;1528:25; 1531:5;1532:14; 1537:5,8,14;1541:9; 1543:17,18;1545:21; 1546:11,17;1547:11; 1548:18,19,22;1549:8, 18,23,24,25,26;1550:2, 4,25;1551:22,23,24; 1552:19,20,20;1553:8; 1562:19;1563:12;	1566:1,10,10,16; 1568:4;1571:6,20; 1576:22;1577:7; 1578:4,6;1582:23; 1583:10;1586:15; 1590:15,26;1594:8,13; 1595:20;1596:24,24 cancer (2) 1447:10,20 canister (1) 1566:7 cannisters (1) 1566:8 cans (6) 1475:23,23;1493:1; 1531:8;1566:5,6 cap (1) 1565:14 Carbide (2) 1490:6,6 carburetor (2) 1482:6,6 cardboard (1) 1513:15 Cardiff (1) 1524:19 career (5) 1477:15;1483:12; 1525:12;1556:22; 1590:21 careful (2) 1471:6;1591:12 Carolina (1) 1478:9 carried (1) 1596:19 case (52) 1417:11;1418:3,25; 1425:8;1427:11; 1428:26;1429:8,13,14, 23,24,25;1449:17,24; 1450:11;1452:11,15, 21;1453:5,9,16;1454:7, 16,17;1455:15;1457:3; 1459:13,14,21;1461:3, 19;1462:1;1463:1; 1465:3;1470:3,22; 1475:2;1482:5; 1490:19;1494:1; 1495:8,13,22,22; 1496:10;1523:15; 1529:2;1548:8,17; 1557:20;1577:4; 1598:23 cases (5) 1447:22;1451:7,7; 1453:10;1497:18 cassette (1) 1494:2 Casson (1) 1530:16 cataract (1) 1475:18
--	--	--	---	---

categories (1) 1463:25	chafing (1) 1468:6	chief (1) 1450:24	classic (2) 1517:20;1572:5	1522:5;1524:8
causation (1) 1462:15	challenge (2) 1429:10;1495:13	China (1) 1575:24	clay (2) 1515:18;1581:23	color (3) 1577:9;1579:25; 1580:16
cause (9) 1418:21,22;1429:10; 1447:20;1493:18; 1495:18;1504:12; 1514:10;1554:14	challengeable (1) 1418:22	Chinese (2) 1532:6,11	clean (2) 1496:17;1537:10	colors (1) 1500:2
caused (5) 1427:15,25;1489:14; 1495:6;1565:16	chamber (3) 1468:9,12,12	chip (1) 1490:20	cleaner (2) 1482:6,7	column (2) 1502:24;1537:13
causes (1) 1501:25	chance (2) 1515:23;1556:2	chips (2) 1490:18,18	clear (11) 1455:4,18,20,22; 1474:6;1516:4; 1517:10;1523:7; 1574:15;1593:12; 1597:3	combined (2) 1460:14;1462:14
cc (1) 1462:12	chances (1) 1522:16	chose (3) 1460:4;1469:21,24	clearer (1) 1452:2	comfortable (1) 1428:13
celebrated (1) 1498:22	change (5) 1428:12;1454:24; 1482:13;1487:14; 1499:7	chromatographs (1) 1477:22	clearly (2) 1580:22;1583:4	coming (12) 1452:24;1457:21,21, 22,22;1490:1;1499:25; 1501:22;1552:5; 1565:14;1577:9; 1580:21
Center (9) 1487:18,22;1488:20, 23;1489:2;1510:25; 1540:16;1549:9; 1569:14	changed (3) 1425:16;1514:7; 1554:19	chrysotile (12) 1465:5;1486:10,18; 1527:9,10,12,19; 1528:1;1559:10; 1581:19;1582:12,15	cleavage (2) 1588:24,25	comment (1) 1449:12
centimeter (3) 1515:15;1527:13,15	changes (2) 1573:16;1585:4	chrystalline (8) 1543:8,15,19; 1544:10;1561:16; 1562:2,2;1588:6	cleave (1) 1518:15	commenting (1) 1563:21
centimeters (1) 1494:3	changing (1) 1514:10	chunks (1) 1588:26	CLERK (5) 1473:25;1474:2,4,6, 10	comments (1) 1449:15
centrifuge (3) 1517:26;1518:6; 1568:23	Channel (5) 1424:7,8,10; 1446:15,23	churches (1) 1499:5	client (1) 1530:21	Commerce (1) 1545:24
centrifuging (1) 1522:25	characteristics (1) 1475:19	cigarette (1) 1508:9	clients (3) 1464:2;1495:18; 1530:9	commercial (1) 1506:18
ceramic (2) 1476:3,7	characterizing (1) 1509:6	cigarettes (2) 1507:14,16	clip (3) 1419:23;1424:9; 1447:2	Commercially (1) 1479:23
ceramics (1) 1474:26	charge (8) 1427:21,22;1485:5; 1493:16;1497:21; 1502:5,6,23	Cincinnati (1) 1481:3	close (6) 1430:23;1484:18; 1494:13;1551:20; 1553:11;1586:6	committed (1) 1418:25
certain (16) 1430:7;1486:23; 1491:13;1511:11; 1512:20;1515:10; 1519:8;1526:25; 1527:4,4;1529:18; 1530:23;1531:5,6,6; 1578:8	charged (1) 1499:6	circled (2) 1526:18;1554:11	closer (3) 1430:17;1450:19; 1468:26	committee (5) 1484:25;1485:6,15, 16,18
certainly (4) 1423:15;1554:4; 1569:10;1594:16	chart (3) 1551:15;1580:4,6	circuit (1) 1491:2	coating (1) 1496:18	common (2) 1468:5;1580:8
Certification (5) 1492:7,13,14; 1530:17;1545:12	charted (4) 1467:10;1586:20; 1587:5,13	citation (1) 1417:12	coatings (1) 1476:24	community (1) 1558:12
certifications (3) 1491:4;1493:5; 1530:13	charts (1) 1577:8	citations (3) 1418:16;1423:10; 1427:9	code (5) 1486:13,17,20; 1488:18;1494:22	Comp (1) 1498:5
certified (13) 1481:22;1482:17,20, 24;1483:4,8;1491:6,7; 1492:4,6,8;1545:7; 1558:13	check (1) 1493:9	cities (2) 1494:19;1499:5	coincident (1) 1427:26	companies (2) 1497:9,19
certify (1) 1492:8	chemist (2) 1478:19,20	citizens (1) 1471:24	colleague (1) 1455:25	company (11) 1447:16;1478:3; 1479:3,9;1494:17; 1497:24,25;1507:10, 22,23;1539:15
cetera (4) 1421:2;1498:22; 1540:2,6	chemistry (31) 1461:24;1464:7; 1467:6;1492:5,5; 1528:19;1538:17,18; 1540:2;1541:6,7,9,25; 1543:12,26;1544:9,17; 1546:25,26;1547:6; 1549:4;1550:6; 1553:22;1554:10,11; 1561:15;1582:8,18; 1584:4;1588:5; 1589:14	City (18) 1423:24;1427:10; 1461:17;1462:24; 1485:23,24;1486:1,2, 21,23;1487:5,9,16; 1494:24,24,25;1499:1; 1509:23	collect (2) 1489:25;1493:25	compared (17) 1464:10;1466:17; 1467:11,12,12; 1527:10;1567:7,14,19, 21,22;1578:22; 1586:21;1589:9,9,10; 1596:22
	cherry (1) 1469:26	claim (2) 1418:9;1469:2	collectors (2) 1530:8,14	compares (1) 1522:20
	Chicago (1) 1495:1	claims (2) 1447:24;1461:12	college (4) 1477:5;1521:21;	comparing (2)

1486:15;1554:12 competitor's (1) 1470:15 complete (1) 1420:26 completed (1) 1491:2 completely (4) 1451:21;1460:2; 1497:8;1569:23 complicated (1) 1538:15 composed (1) 1572:3 composite (1) 1475:14 composites (1) 1475:3 compounds (1) 1482:9 comprehensive (1) 1492:25 computer (2) 1505:7;1506:4 concentrate (1) 1525:2 concentrating (1) 1598:13 concentration (26) 1462:11;1463:19; 1470:7;1511:10,12,13; 1513:21;1521:9,22; 1522:6,7,12,17;1524:9, 25;1534:22;1535:1; 1537:6;1556:2;1576:1; 1577:24;1591:25; 1593:16;1594:2; 1597:17,22 concentrations (8) 1459:8;1467:4; 1469:8;1535:24; 1555:13;1575:15; 1577:18;1586:11 concept (3) 1515:9,11;1516:22 concepts (3) 1509:9;1510:2,5 concern (1) 1430:22 concerning (1) 1428:25 concerns (3) 1424:26;1430:9; 1453:25 conclude (3) 1526:13;1536:15; 1586:24 concluded (2) 1462:6;1565:20 conclusion (1) 1447:1 conclusions (1) 1460:10	concrete (3) 1476:23;1484:19,22 conduct (1) 1418:23 conducting (1) 1463:24 conference (4) 1451:1;1495:12; 1506:24;1507:2 conferences (2) 1483:3,10 confidentially (1) 1431:9 confirm (3) 1466:4;1541:5; 1543:15 confirmed (2) 1464:7,8 conflated (1) 1451:24 conflating (1) 1457:13 conformity (1) 1550:19 connection (1) 1490:23 consecutive (1) 1419:25 consensus (1) 1462:18 consent (1) 1418:5 conservative (2) 1464:25;1468:24 consideration (1) 1471:6 considering (1) 1449:13 considers (1) 1463:10 consist (2) 1534:20;1567:18 consistency (1) 1575:25 consistent (14) 1447:14;1465:12; 1466:19,26;1467:7; 1468:20;1546:18; 1567:24,25;1575:17, 20;1576:2;1585:14,26 consistently (1) 1572:24 constantly (2) 1481:24;1505:25 constitutes (1) 1589:24 consult (1) 1497:10 consultant (1) 1490:11 consultants (3) 1463:20;1521:7,16 consulting (3)	1427:13;1477:17; 1485:22 contain (6) 1468:14;1478:26; 1480:23;1532:10; 1535:19;1536:16 contained (8) 1487:6;1507:24; 1509:13,16;1514:20; 1531:14;1532:11,11 container (19) 1467:18;1469:7,11; 1470:6,9,10,11; 1555:10,18;1565:2,17; 1566:13;1571:6,8,11, 12,14;1572:1;1583:8 containers (12) 1466:14;1531:5; 1565:20;1566:12,14; 1567:2,3;1573:12; 1575:10,18;1576:11; 1582:23 contains (1) 1467:3 contaminant (3) 1458:3;1582:12,14 contaminated (3) 1496:3;1569:20,25 contamination (9) 1460:7,15;1493:20; 1496:6;1555:8; 1568:17,25;1569:17; 1570:1 Content (1) 1517:13 context (2) 1418:17;1516:15 contexts (1) 1529:6 continue (7) 1420:10;1443:5; 1471:18;1472:23; 1483:14;1523:24; 1564:24 continued (6) 1428:6;1465:13; 1503:16;1542:11; 1563:9;1584:13 continuing (2) 1483:7,9 contract (1) 1489:6 Control (5) 1488:20,23;1489:2; 1492:7,16 conversation (1) 1419:9 Conversely (1) 1417:24 convey (1) 1449:14 convinced (2) 1429:18;1430:4	copper (5) 1475:26;1541:11,12, 13,23 copy (3) 1420:4;1431:7; 1552:13 corner (1) 1507:2 corporation (1) 1490:3 corrected (1) 1552:13 correctly (1) 1539:18 corroborated (1) 1482:23 corrosion (1) 1476:14 Cosmetic (8) 1517:13;1522:3; 1545:15,19;1567:11; 1569:6;1573:15; 1582:10 cosmetics (1) 1569:3 cost (2) 1505:8,10 counsel (4) 1427:13;1428:14; 1450:14;1464:21 count (14) 1456:24;1457:13; 1528:21;1533:19,24; 1535:7;1550:12,13,14, 15,19,20;1558:14; 1561:5 countable (2) 1556:14;1592:6 counted (11) 1463:23;1464:15,25; 1537:23;1558:8,9,17; 1560:22;1562:7,23; 1564:4 counterpart (1) 1564:17 counting (16) 1456:20;1457:4,7, 15,15;1492:4;1528:6; 1529:2,5,9;1538:9; 1540:6;1557:16; 1559:24;1582:19; 1583:5 country (4) 1479:25;1484:20; 1488:18;1495:2 county (1) 1494:8 couple (9) 1449:25;1450:5,7; 1481:21;1533:21; 1534:3;1543:26; 1565:12;1576:7 coupled (1)	1474:21 coupon (1) 1566:11 course (10) 1422:14;1427:3; 1488:8;1494:25; 1501:11;1528:22; 1547:21;1549:4; 1556:22;1561:15 courses (2) 1483:8,9 COURT (170) 1417:2,5;1418:15, 23;1419:10,12,15; 1420:2,5,9,15,20; 1421:2,5,12;1422:2,7, 12,18;1423:4,8,12,15, 17,21;1424:4,7,12,15, 18,21,23;1425:10,21, 25;1426:5,9;1427:7,20, 20,24;1428:14,16,18, 23;1429:9,15,17; 1430:2,10,12,14,21; 1431:6,8;1446:10,13, 17;1447:3,4;1449:1,3, 25;1450:3,19;1451:13, 18;1452:9,11;1453:23; 1454:8,18;1455:17,20; 1463:4,10,13;1465:10; 1466:11;1469:16; 1470:4,19,20;1471:16, 17,20;1472:11,12,13, 16,18,21;1473:11,15, 18,25;1474:2,4,6,7,9, 10,11;1475:5,7,11; 1476:5;1479:18; 1495:12;1496:13,15; 1500:19,21,24;1501:1; 1502:18;1508:5; 1510:9,15,20;1521:19; 1523:11,13,18,21; 1524:1,4;1526:4; 1532:18,24;1536:19, 22;1551:6,8,10; 1557:24;1560:18; 1562:13,15,19,21,25; 1563:14,19,23; 1570:10,14,16,19,22; 1592:10,14,22;1593:4, 8;1594:10,12,15,17; 1596:9,13,16,20; 1597:11;1598:4,12,18, 26;1599:3,6 courthouse (1) 1451:17 courtroom (10) 1430:18;1472:20; 1473:3;1475:8; 1516:17;1523:20; 1524:2;1570:17,20; 1599:5 courtrooms (1) 1516:14
---	---	---	--	--

courts (1) 1521:25	cup (3) 1501:2,15,15	1420:21,21;1481:9; 1493:19,22	1563:3,6,7;1564:6	depending (5) 1454:25;1504:14; 1514:15;1575:14,20
Court's (8) 1420:10;1425:10; 1426:15;1454:9,20; 1455:10,16,22	current (1) 1497:18	dealing (2) 1418:16;1475:2	definitional (1) 1457:8	depends (1) 1500:12
cover (4) 1457:14;1505:17,17; 1506:12	customers (1) 1468:21	dealt (1) 1420:22	definitively (2) 1425:3;1454:2	deposition (2) 1462:1;1495:12
covered (3) 1493:14;1541:2; 1594:7	cut (1) 1541:13	death (1) 1471:26	defraction (13) 1504:12;1514:5; 1524:22;1528:19; 1542:10;1543:16; 1544:17;1547:22; 1549:5;1550:7;1584:7, 9,11	depositions (1) 1422:4
covers (2) 1478:24;1515:3	cutting (2) 1565:17;1568:24	decades (6) 1459:3,4;1529:20; 1530:2;1531:7;1581:8	defractions (1) 1584:6	describe (1) 1548:10
CPLR (1) 1429:23	CV (1) 1479:13	December (1) 1447:12	defy (1) 1453:10	described (1) 1520:21
cracked (2) 1488:18;1494:22	Cyprus (1) 1585:21	decide (10) 1418:25;1421:6; 1422:2;1425:8;1429:8; 1452:11,15;1453:9; 1454:7,16	degree (1) 1497:5	description (1) 1447:14
crafted (1) 1455:17	D	decided (2) 1454:17;1515:5	degrees (3) 1498:12;1518:14; 1584:8	designate (1) 1548:26
crazy (1) 1519:3	D-2205 (1) 1485:6	deciding (1) 1453:9	deliberate (1) 1428:3	designed (5) 1497:3,6;1511:21; 1565:9;1569:20
create (1) 1564:10	D5755 (1) 1560:26	decision (9) 1428:13,20,23; 1448:6;1452:21; 1453:5,12;1461:19; 1551:21	deliberations (2) 1427:16;1428:4	despite (3) 1427:13;1429:6; 1451:21
created (3) 1563:17,21;1564:16	D-5755 (2) 1493:17;1529:10	decisions (2) 1422:8;1453:13	demonstrate (2) 1510:5;1511:16	detect (16) 1497:6,17;1511:17, 20,26;1512:16,24; 1513:4;1517:19; 1521:9;1536:14; 1537:1;1573:21; 1590:24;1591:6,16
creating (2) 1485:3;1561:8	D5756 (1) 1561:2	declaring (1) 1429:4	demonstrating (1) 1520:12	detectable (1) 1512:20
credibility (1) 1453:7	damage (7) 1466:9,13,15; 1499:3;1565:15,19; 1566:16	declared (1) 1427:14;1428:18	demonstrative (9) 1510:17;1516:3; 1524:13;1566:2; 1568:1;1570:2; 1572:13;1578:24; 1580:13	detected (2) 1513:18;1571:22
credible (1) 1429:11	damaging (1) 1466:8	declined (2) 1427:14;1428:18	denied (3) 1451:4;1454:24; 1471:22	detecting (3) 1511:2;1522:16; 1595:3
criminal (1) 1418:17	dark (4) 1506:7,13;1548:23; 1583:18	decontaminated (1) 1569:24	dense (5) 1516:24;1518:8; 1548:24;1549:13; 1550:4	detection (41) 1510:5,18;1511:7, 16;1512:21,22;1513:6, 12,17,20;1518:23,23, 25,25;1519:4;1526:8; 1527:23;1535:21; 1536:6,7,11,13,23; 1537:3,4,9,11;1589:22, 24;1590:19;1591:18; 1592:11,17,23; 1593:10;1594:23,26; 1595:3,21;1596:21,23
criteria (10) 1457:4,7;1529:5,12; 1562:8,9;1577:15,17; 1582:7,19	darker (2) 1503:11;1583:19	deemed (1) 1479:20	denser (1) 1516:25	determinable (1) 1450:18
crocidolite (2) 1507:15;1559:12	Dartmouth (3) 1521:21;1522:5; 1524:8	defendant (3) 1495:8,14,23	densities (1) 1515:25	determine (22) 1428:17;1478:26; 1486:8,9;1487:1,6,7, 12;1509:13,16;1517:7; 1528:6;1536:25; 1537:2;1541:7; 1563:17;1564:20; 1565:18;1566:25; 1577:24,24;1585:13
cross (5) 1420:26;1457:7; 1467:23;1471:7; 1570:1	dash (1) 1539:23	defendants (6) 1463:10;1494:20; 1495:4,17;1499:2,7	density (32) 1514:23;1515:10,13, 14,15;1516:22,26; 1517:11,15;1518:4,4,5; 1520:12,16,17,20,25; 1521:8;1522:2;1525:4; 1526:22;1527:2,12,14, 16,17;1528:3;1540:25; 1574:13;1575:1,6,7	determined (1) 1487:10
crossed (1) 1580:17	data (6) 1493:2;1533:24; 1539:4,20;1583:13; 1588:9	defendant's (2) 1462:4,7	denied (3) 1451:4;1454:24; 1471:22	determines (1)
crotch (1) 1468:4	date (4) 1420:25;1479:20; 1533:2;1569:11	defending (1) 1465:10	denial (1) 1429:10	
crystal (3) 1504:11;1538:21; 1584:11	dated (6) 1462:2;1533:8,13; 1557:20;1571:10; 1573:6	defense (2) 1428:14;1467:20	departed (2) 1523:19;1599:4	
crystalline (1) 1464:9	daunting (1) 1488:10	defer (1) 1427:3	Department (7) 1417:11;1427:11; 1429:14,15,23; 1477:10;1545:24	
crystals (2) 1504:12,14	day (8) 1421:11,12,13; 1453:10,10;1497:7; 1498:6;1537:25	defines (1) 1465:4		
Cu (1) 1541:11	days (2) 1489:7;1591:9	defining (2) 1457:12,12		
cubic (3) 1515:14;1527:12,15	DC (1) 1478:11	definition (16) 1464:21;1540:7; 1544:2;1546:21; 1556:19;1557:24; 1558:19;1559:7,17; 1561:20,24;1562:6;		
Cumming (1) 1474:18	deal (5)			
cumingtonite (1) 1560:10				

February 25, 2019

1429:10 determining (1) 1467:26 develop (2) 1475:22;1507:19 developed (8) 1476:4,6;1485:7,15; 1490:21,25;1494:22; 1524:20 developing (2) 1480:10;1485:1 device (1) 1569:13 diameter (2) 1550:24,26 difference (7) 1486:17;1502:5,23; 1554:14;1581:5; 1584:1;1586:14 differences (3) 1533:12,14,15 different (49) 1418:17;1421:5; 1459:6,6,13;1460:2,19, 25;1461:1;1474:25; 1475:19,20;1476:19; 1477:26;1480:16; 1481:2;1490:9,24; 1492:19;1496:11,25; 1497:8,18;1505:6,11; 1515:11,25;1516:2; 1529:8,19;1538:17; 1546:24;1552:17,21, 22;1553:22;1560:16; 1567:16;1574:14; 1575:6;1578:12; 1580:4,5,15;1582:4; 1584:12;1592:19; 1594:6,6 differently (1) 1523:2 difficult (1) 1510:24 digressed (1) 1453:21 dilute (2) 1519:3;1525:24 dilution (1) 1540:23 dimension (1) 1548:15 dimensional (2) 1508:25;1509:4 dimensions (1) 1587:7 direct (2) 1431:4;1474:12 direction (2) 1449:7;1580:21 directions (2) 1481:8;1504:13 Direct-Longo-Block (67) 1474:1;1475:1;	1476:1;1477:1;1478:1; 1479:1;1480:1;1481:1; 1482:1;1483:1;1504:1; 1505:1;1506:1;1507:1; 1508:1;1509:1;1510:1; 1511:1;1512:1;1513:1; 1514:1;1515:1;1516:1; 1517:1;1518:1;1519:1; 1520:1;1521:1;1522:1; 1523:1;1543:1;1544:1; 1545:1;1546:1;1547:1; 1548:1;1549:1;1550:1; 1551:1;1552:1;1553:1; 1554:1;1555:1;1556:1; 1557:1;1558:1;1559:1; 1560:1;1561:1;1562:1; 1563:1;1564:1;1585:1; 1586:1;1587:1;1588:1; 1589:1;1590:1;1591:1; 1592:1;1593:1;1594:1; 1595:1;1596:1;1597:1; 1598:1;1599:1 directly (3) 1497:3;1498:3; 1564:19 dirt (3) 1515:16,18,22 disassociate (1) 1598:24 disburse (1) 1518:3 discard (2) 1518:16;1520:18 discharge (1) 1429:16 discovered (1) 1447:13 discretion (1) 1429:9 discuss (1) 1523:14 discussed (5) 1421:19;1461:20; 1463:18;1472:15; 1525:1 discussing (2) 1429:23;1453:4 discussion (3) 1424:9;1455:11; 1532:16 discussions (1) 1427:25 Disease (3) 1488:20,23;1489:2 dispenser (2) 1566:9,14 dispensing (1) 1565:7 dispersion (4) 1576:24;1577:2; 1579:2,6 disregard (1) 1562:16	disrespectful (1) 1417:25 distance (4) 1543:20,21,22,24 distinguish (3) 1456:14;1584:6; 1585:5 distinguished (1) 1487:2 distribution (6) 1567:15,16,18; 1587:3,20;1589:3 districts (1) 1488:17 disturb (1) 1555:12 diversified (1) 1478:12 divide (1) 1540:11 Division (2) 1417:11;1429:15 Doc (1) 1461:20 doctor (4) 1471:23;1510:20; 1523:21;1596:16 doctorate (2) 1461:22;1477:11 doctor's (1) 1499:22 document (7) 1419:26;1485:11; 1522:18;1523:8; 1524:15;1544:7,19 documentation (2) 1464:3;1530:14 documents (9) 1420:14;1421:10; 1422:3;1468:17,20; 1521:25;1553:17; 1571:2;1576:9 dollars (1) 1498:20 done (24) 1420:19;1421:25,26; 1466:11;1473:2; 1480:6;1481:18; 1484:7;1485:22; 1488:21;1489:19; 1495:4;1500:7; 1517:11;1523:10; 1524:24;1533:9; 1568:14,18,22;1569:3; 1575:18;1581:7; 1594:12 Donna (1) 1470:12 door (3) 1484:17;1494:14; 1545:12 doors (1) 1478:6	dots (2) 1543:18,19 doubt (4) 1425:11,12;1454:10, 11 doubted (1) 1450:6 doubts (2) 1424:25;1453:25 Douglas (1) 1429:12 Dow (4) 1490:3,4,5,10 down (20) 1417:9;1418:18; 1430:14;1471:24; 1472:17;1475:24; 1487:13;1495:13; 1501:23;1502:5,20,24; 1512:26;1513:2; 1514:12;1536:1,9; 1548:22;1565:14; 1595:18 downhill (3) 1543:4;1547:8,19 downside (1) 1526:1 downward (1) 1547:4 Dr (162) 1420:14,16,16,18,23, 24;1421:7,15,19,22; 1422:9,15,21,22,22,23; 1455:25;1456:4,17,18, 22;1457:1,6,13,19; 1458:19,25;1459:12, 14;1460:4,6,7,18; 1461:13,16,20,20,21; 1462:4,8,15,17,17,19, 20,24;1463:2,14,16,19, 23,24,25;1464:4,11,15, 25;1465:7,11;1466:4, 13,15,20;1467:6,9,10, 12,25;1468:7,9,13,23; 1469:7,11;1470:8,10; 1473:24;1474:14; 1479:12,21;1480:5; 1491:11;1493:14; 1494:10;1495:7; 1496:14;1497:9; 1501:5,9;1502:15; 1504:17;1505:3; 1507:11,20;1509:9; 1510:13,17,22,24,25; 1511:19,22;1512:9; 1513:22;1517:14; 1520:11,21;1521:6,14, 21;1522:4,11,19; 1524:7,8,16,17,19,19, 20;1528:4;1529:15,18; 1532:20;1537:13; 1540:20;1543:7; 1547:23;1549:22;	1550:23;1551:4,13; 1563:15,25;1564:18; 1570:4,23;1571:4; 1574:15;1579:11,25; 1585:11,14,20;1586:2, 8,19,24;1587:5; 1588:21;1589:9,19; 1590:3,25;1591:13; 1594:18,22;1595:2,23; 1596:21;1597:13,19 draft (3) 1533:9,13,17 drawer (1) 1493:1 drawing (1) 1485:17 drill (1) 1489:22 dryers (2) 1497:12,13 duly (1) 1473:26 duper (1) 1514:12 during (6) 1427:15;1446:23; 1459:20;1497:14; 1539:25;1573:14 dust (5) 1459:20;1461:11; 1480:22;1493:18; 1515:20 dusting (1) 1460:23 duty (1) 1429:26
E				
E5432 (1) 1484:22 earlier (16) 1452:3;1526:7; 1531:18;1536:13; 1546:3;1547:14; 1550:9;1551:15; 1552:26;1561:7; 1570:4;1574:1,21; 1575:17,21;1595:14 early (10) 1480:11;1481:4; 1489:7;1507:4,12,22; 1521:9,23,26;1596:2 easier (2) 1489:16;1502:8 easily (1) 1526:23 easy (3) 1499:17,21;1515:26 eBay (5) 1457:22;1530:9,18, 22,23 Ebola (1)				

1489:3 EDS (8) 1504:9;1541:9; 1544:8;1547:13,24; 1553:14;1554:7,11 educate (1) 1516:14 educated (1) 1498:10 education (2) 1483:7,9 educational (1) 1477:4 Edward (2) 1461:21,22 effect (4) 1430:7;1564:11,13; 1578:19 effects (1) 1562:8 efficient (2) 1517:18;1523:3 eight (2) 1468:23;1533:7 either (13) 1417:22;1421:25; 1428:25,26;1505:19; 1520:26;1530:8; 1536:7;1566:15; 1567:1;1575:24; 1589:16;1590:24 Electric (3) 1497:11,12;1498:6 electro (1) 1514:6 electromagnetic (3) 1502:6,25;1503:13 electron (52) 1464:6,18;1477:21, 22;1478:21,22; 1479:26;1483:5; 1489:4;1494:6; 1499:12,15;1501:18; 1502:1,2,17;1503:4; 1504:13;1506:16,19; 1507:5,25;1508:8,18, 21,22,22,23;1514:11, 22;1519:9;1520:8; 1521:2,3;1528:9; 1540:4,16;1541:6; 1544:7;1547:22; 1548:24;1549:3,5,13; 1550:4;1553:9; 1571:18,19;1574:2,5; 1584:7;1591:7 electrons (8) 1501:25;1502:4,5,7, 22;1503:6,6;1504:2 element (3) 1527:7;1538:25; 1554:15 elementary (2) 1516:8,20	elements (1) 1541:14 elevator (6) 1487:23;1488:7,9, 10,11,12 elevators (1) 1488:2 eliminated (1) 1550:18 Elmo (1) 1566:1 elongation (2) 1579:22,24 else (7) 1431:6;1455:6; 1457:15;1471:18; 1484:15;1527:15; 1538:24 Emergency (1) 1491:15 emphasize (1) 1598:20 emphatically (1) 1426:17 employees (7) 1478:7,8,14;1498:4, 5,7,10 empty (1) 1566:12 encapsulated (2) 1497:2,4 encapsulating (1) 1496:24 encompass (1) 1533:5 end (8) 1502:1;1508:11; 1534:20;1537:25; 1551:26;1552:5; 1553:16;1562:22 ended (2) 1428:10;1533:13 energy (1) 1476:2 engineer (4) 1476:21;1484:20; 1486:8;1487:12 engineered (1) 1487:4 engineering (13) 1461:23;1474:20; 1476:13,20,20,26; 1477:3,8,10,11,18; 1480:25;1494:23 Enjoy (1) 1523:21 enough (6) 1452:20;1453:4,24; 1503:14;1512:8,14 entered (3) 1472:19;1524:2; 1570:20 entering (4)	1430:10;1472:18; 1524:1;1570:19 enthusiastic (1) 1417:6 entire (9) 1427:20;1451:24; 1459:2,3;1485:7,18,18; 1535:16;1572:20 entities (1) 1485:21 entity (1) 1485:8 EPA (16) 1456:20;1464:19; 1480:6,9,22,25;1481:3, 5,7,15;1485:7; 1528:12;1540:6; 1554:19;1556:6; 1560:24 EPA/AHERA (3) 1529:1,4,7 EPA's (1) 1463:23 epidemic (1) 1489:7 equal (8) 1502:3;1528:16; 1537:20;1540:8; 1554:2,5;1558:5; 1561:12 equals (1) 1583:4 equipment (5) 1498:7,8;1499:10; 1505:8;1508:19 equivocal (3) 1419:19;1425:14,19 Ernest (2) 1507:11,20 escort (1) 1431:13 essentially (8) 1487:1;1491:10; 1503:1;1516:12; 1519:20;1567:18; 1582:2,15 estimate (1) 1550:16 et (4) 1421:2;1498:22; 1540:2,6 evaluation (1) 1565:3 even (20) 1431:7;1451:16; 1452:7,14;1454:21,22; 1458:13;1460:3,9,21; 1465:9;1467:19; 1471:21;1473:6; 1483:11;1493:1; 1531:6;1545:14; 1566:9;1577:15 event (1)	1471:12 Everybody (7) 1430:15,25;1451:15; 1478:6;1484:15; 1499:19,21 everyone (5) 1417:2;1470:20; 1472:22;1524:5; 1544:26 everywhere (1) 1580:20 evidence (26) 1418:26;1425:9,9; 1429:9;1447:8; 1449:16;1451:19; 1453:15;1454:8,8,17, 18;1462:14;1466:14; 1467:15;1469:6; 1471:7,19;1479:16,20; 1521:6;1524:15; 1566:25;1567:3; 1585:12;1589:20 evident (1) 1447:5 evidentiary (5) 1420:11;1421:6; 1422:21,24,25 evidently (1) 1525:6 exact (11) 1450:17;1487:3,20; 1499:6;1516:23; 1540:25;1561:11; 1574:23;1582:8; 1584:4;1586:6 Exactly (9) 1423:20,20;1464:14; 1490:12;1499:13; 1507:20;1525:3; 1568:18,22 exaggerate (1) 1500:11 examination (6) 1420:26;1457:7; 1467:23;1469:13; 1471:7;1474:12 examined (2) 1466:14;1474:2 Examining (1) 1479:14 example (11) 1460:22;1486:5,10; 1518:21;1546:3; 1547:6;1572:5;1576:3, 18;1581:13,14 excellent (1) 1419:15 except (5) 1422:9;1538:24; 1565:20;1568:19,23 exception (1) 1455:13 exclude (1)	1471:20 excluded (2) 1456:5;1461:14 exclusively (1) 1450:21 excuse (5) 1417:14,22;1458:5; 1577:10;1591:23 excused (1) 1598:19 executive (1) 1450:24 exercise (1) 1449:18 Exhibit (15) 1465:3;1479:12,15, 19;1521:5;1524:12; 1529:16;1533:1; 1557:19;1558:24; 1571:1;1572:12; 1585:12,17;1589:20 exhibiting (1) 1428:17 exhibits (2) 1422:6;1572:11 exited (1) 1570:17 exiting (3) 1523:18;1570:16; 1599:3 exotic (1) 1476:9 expand (1) 1489:15 expect (3) 1457:2,24;1549:5 expenses (1) 1498:1 experience (4) 1492:17;1528:25; 1580:7;1590:3 experienced (1) 1580:2 experiment (4) 1459:25;1460:5; 1461:7;1565:18 expert (13) 1457:2;1470:22,25; 1471:13;1487:5; 1495:8,23;1497:21; 1563:22;1592:21; 1593:2;1594:4;1595:2 experts (1) 1467:20 explain (6) 1453:11;1500:21; 1578:4,6;1583:10; 1595:20 explained (1) 1420:24 explanation (1) 1499:14 exposed (2)
--	--	--	---	--

1461:3;1470:12 exposure (8) 1462:10;1468:9,11; 1469:19;1470:2; 1483:13;1495:6,18 express (1) 1430:24 expressed (1) 1550:10 expressing (1) 1534:25 expression (1) 1454:15 expressly (2) 1428:24;1429:4 extensive (1) 1493:2 extent (4) 1418:4;1461:7; 1463:9;1469:2 external (1) 1418:26 extra (1) 1527:7 extrapolation (4) 1458:19,24;1459:7; 1467:17 extreme (1) 1482:5	1505:21,21;1541:12; 1548:9;1563:26 fared (1) 1493:6 faster (1) 1476:2 fault (1) 1475:7 favor (1) 1418:19 FDA (7) 1447:16;1492:10,12, 16,19,20,23 fearful (1) 1428:2 features (1) 1509:7 February (3) 1478:7;1571:10; 1599:9 Federal (2) 1471:17;1488:21 feeding (2) 1496:21;1498:6 feel (6) 1428:12,13;1431:2; 1453:1;1495:5,17 feeling (2) 1451:8;1453:17 feels (1) 1426:22 feet (6) 1478:14;1501:2,10, 17;1502:2;1504:25 felt (1) 1497:13 ferret (1) 1579:7 fertilizer (5) 1495:24,25;1496:10, 12,16 few (9) 1417:12;1421:22; 1489:24;1502:16; 1510:4;1560:16; 1578:23;1588:13; 1597:13 fiber (36) 1462:11;1464:24; 1503:5,5,7;1509:3; 1518:25;1528:15,19; 1533:18;1534:3; 1536:7;1538:5; 1539:25;1541:10; 1543:16;1544:3; 1546:22;1548:8; 1550:21;1551:24; 1553:24;1557:25; 1579:1,16;1583:2,17, 19,19;1584:1,8;1590:6, 19;1591:22,24,25 fibers (84) 1447:19;1456:13,15,	24,25;1457:4;1458:23; 1460:13;1462:12; 1465:1;1467:22,26; 1494:7,8;1504:3,10; 1518:9,24,26;1519:6; 1528:10;1534:25; 1535:1,9,23,24,25,25; 1536:2,5;1537:23,23; 1538:2,10;1544:15,18, 19;1548:19;1549:2,26; 1550:3,10,13;1551:22; 1552:4,21,22;1553:20; 1563:8;1572:4,8; 1575:16;1576:7; 1577:12,14,19,20,20; 1578:8,14;1579:23; 1580:24;1583:17,18; 1586:9,9,13,16,17; 1589:2;1590:5; 1591:17,23;1592:2,2,5, 18;1593:11,15,17,26; 1594:6;1595:8; 1596:22 fibers/bundles (2) 1536:12;1537:7 fibrous (25) 1465:5,7;1500:15; 1542:9;1544:2; 1547:21;1550:5; 1559:9,10,14,20; 1560:2,3,5,9,10,11,21; 1561:19;1572:9; 1576:9;1581:20,22,25; 1583:25 field (2) 1474:23;1477:2 fifth (2) 1548:7,7 Fifty-six (1) 1593:18 fight (1) 1427:17 figure (5) 1482:11;1486:3; 1500:8;1533:21; 1534:2 filament (1) 1501:24 filed (1) 1461:19 filled (1) 1424:25 filter (7) 1507:15;1518:16; 1519:14;1535:11,13, 14;1578:12 filtered (3) 1507:15;1520:17; 1569:22 filtering (2) 1568:24;1569:8 filters (4) 1479:26;1492:4;	1568:13;1569:7 filtration (1) 1569:21 finalized (1) 1534:8 Finally (3) 1458:18;1459:10; 1477:12 find (42) 1427:14;1429:17; 1453:10,14;1467:20; 1471:12;1492:20; 1493:10;1511:8; 1515:22;1518:24; 1519:2;1521:20,21; 1526:13;1534:11,13, 14;1535:9;1537:4; 1538:7;1556:9; 1559:14,20;1560:3; 1568:6;1569:4; 1571:13;1577:8; 1578:9,20;1581:10; 1582:14;1590:5,8,12, 15,23;1591:24,25; 1593:14,16 finding (22) 1459:2;1469:25; 1471:15;1512:11; 1515:24;1518:25; 1519:21;1525:23; 1545:18;1548:12; 1553:4,5;1575:25; 1576:4,5,10,14; 1578:16;1581:6; 1582:16;1583:24; 1586:7 findings (8) 1447:19;1456:10; 1457:16;1458:16,20; 1459:9;1585:14,26 finds (1) 1456:12 fine (8) 1449:5;1497:3; 1503:1,1;1523:12; 1570:12;1585:8; 1590:24 finer (1) 1578:13 finger (1) 1502:2 fingerprint (2) 1487:2;1543:5 Finish (2) 1592:22;1594:13 finished (1) 1449:3 fire (1) 1486:17 fireproofing (4) 1486:5,10,24;1488:1 firm (8) 1458:1;1466:4;	1467:2;1469:21; 1495:8,23;1530:17,21 firms (4) 1457:22;1464:1; 1495:16;1575:19 First (44) 1417:9,11;1418:7, 12;1419:18;1423:6; 1426:19;1427:9,11; 1428:23;1429:17; 1451:22;1452:4,5,6; 1456:7;1459:22; 1463:8;1473:20; 1478:25;1479:3,6,24; 1482:4;1487:10,24; 1500:6;1501:3; 1506:18,20;1507:12, 15;1513:14;1514:21; 1516:16;1521:20; 1523:5;1538:6; 1541:11;1555:9; 1565:5;1571:5;1580:2; 1587:5 five (48) 1417:10,17,19,22; 1418:7,8;1422:20; 1429:24;1430:8; 1450:5,9;1455:14; 1463:12;1465:1; 1468:22;1474:25; 1481:13;1494:3,3,4,4, 4;1525:6;1528:16,17; 1537:20;1548:7; 1551:12;1554:4,5; 1556:10,13,17;1558:8, 16;1561:14;1570:10; 1577:14;1583:4; 1587:25;1588:2; 1589:22;1590:6; 1591:7,16,26;1592:2,3 flash (1) 1518:13 flexibility (1) 1563:8 flexible (1) 1589:14 flies (1) 1480:4 float (3) 1518:18;1527:19; 1528:1 floats (1) 1518:8 floors (2) 1487:24;1488:5 fluorescent (2) 1506:12,14 Florida (1) 1479:4 flow (1) 1569:20 fluid (1) 1580:3
F				
facility (2) 1498:7;1546:2 fact (6) 1426:16;1457:14; 1462:15;1468:22; 1495:7;1541:14 factor (2) 1419:2;1551:12 Fahrenheit (1) 1518:14 failed (2) 1477:17;1490:19 faint (1) 1579:15 fair (14) 1418:25;1425:3; 1426:25;1448:5; 1449:14;1451:9,19,22, 25;1452:11,15,23; 1454:2,19 fairly (1) 1547:20 falls (1) 1456:19 familiar (5) 1557:23;1559:3; 1591:13;1594:11,18 famous (1) 1507:10 far (7) 1417:7;1471:9;				

fluorescent (3) 1503:15;1505:17; 1506:8 focus (1) 1551:23 focused (1) 1489:23 Folks (6) 1470:19,19;1492:9; 1497:13;1569:24; 1589:11 follow (8) 1425:10;1454:9,20; 1559:25;1560:14; 1574:12;1587:9; 1588:12 followed (4) 1468:7;1524:21; 1574:7,9 following (5) 1456:20;1491:13,17, 21,22 follows (1) 1474:3 follow-up (1) 1562:19 foot (2) 1498:4,6 footnote (1) 1463:12 Force (3) 1490:15,16,17 foremost (1) 1428:24 forensic (2) 1476:12;1488:18 forensically (1) 1486:9 forgot (1) 1472:8 forgotten (1) 1449:12 form (5) 1456:16;1538:14; 1551:3;1560:15; 1572:8 formaldehyde (1) 1496:19 formed (5) 1538:16,19;1561:26; 1562:6;1572:8 forms (3) 1465:5,7;1559:10 formulations (3) 1486:14,15;1487:14 forth (2) 1476:17;1505:24 forward (3) 1422:14;1510:8,22 found (69) 1447:18;1462:7; 1464:5,10,12;1465:7; 1466:14,19;1467:11,	21;1469:9;1507:20,21; 1511:12;1517:12,18; 1525:7;1527:23; 1534:23,25;1535:19, 19;1536:5;1537:14,15; 1540:14;1544:5; 1545:5;1546:19; 1547:2;1550:11; 1553:8;1554:24; 1555:6,24;1556:5,22; 1557:9;1560:5,12,21; 1561:5;1562:3; 1567:17;1572:24; 1575:9,13,22;1578:6; 1581:7;1582:1,3,11; 1583:12,25;1585:13; 1586:2,3,8,10,11,21; 1587:4,24;1588:8; 1592:19;1593:13,22,25 foundation (5) 1457:20;1467:25; 1536:19,20;1563:12 four (28) 1417:18,22;1418:6, 11;1422:19;1429:24; 1446:15,23;1455:14; 1457:24;1468:16,18, 22;1481:3,16;1501:16; 1526:17;1566:12; 1591:7;1592:3,7,13,18, 18;1593:14,17,25,25 Fourth (2) 1429:13,15 fragments (2) 1588:24,25 frame (1) 1573:14 Francisco (1) 1494:25 free (3) 1431:2;1458:3; 1512:11 freeze (1) 1518:13 freezing (1) 1523:3 Friday (18) 1418:9;1419:3,4,5; 1424:3,7,10;1430:23; 1446:15,20;1447:7; 1472:10,11,12,13,14; 1473:9,11 front (2) 1532:20,25 Frye (2) 1463:4,11 Fulham (2) 1507:23;1508:7 full (5) 1450:9;1452:14; 1453:25;1474:7; 1485:16 Fullam (2)	1507:11,21 fully (2) 1420:21;1453:11 fumes (1) 1482:14 fun (1) 1490:2 fund (1) 1554:20 funeral (1) 1472:3 further (8) 1419:4;1426:13; 1431:6,9;1450:8; 1455:1,2;1462:9 Furthermore (1) 1466:15 future (1) 1423:9	G	1474:9,19 gesturing (3) 1505:2;1587:16; 1588:23 gets (7) 1454:25;1459:5; 1496:20;1503:2,4,12; 1551:20 given (3) 1423:5;1451:15; 1539:3 gives (5) 1504:11;1508:24; 1509:4;1559:18; 1579:4 giving (1) 1450:25 glass (6) 1499:25;1500:2,3; 1507:17;1569:15; 1577:13 goal (3) 1534:4,6;1595:18 God (2) 1479:4;1480:4 goes (21) 1417:13;1462:8,11, 14;1467:23;1471:19; 1476:11;1484:18; 1485:15,18;1499:20; 1500:1,3;1501:23; 1503:3,4;1518:7,9; 1567:11;1579:3; 1588:4 gold (4) 1515:13,15,19,22 goldish (2) 1579:3;1580:22 goniometer (1) 1584:10 Good (20) 1417:2;1418:2; 1430:18;1453:17; 1455:21;1460:22; 1461:15;1474:14,15; 1481:9;1495:19; 1500:4;1501:4; 1504:15;1524:4,6; 1526:22;1532:17; 1546:10;1570:11 government (7) 1447:11,17;1450:8; 1462:19;1488:19,21; 1499:2 governments (1) 1499:1 Governor (2) 1581:20,25 Grace (2) 1486:13,20 graduate (4) 1475:16;1477:8,16, 18	graduated (1) 1479:8 Graduating (1) 1477:12 gram (27) 1460:13;1467:22,26; 1513:3,13;1515:14; 1519:6;1535:1,23,25, 25,25;1536:2,12; 1537:7,23;1550:10; 1575:16;1577:20,21; 1586:13,16;1591:24; 1592:5;1593:11; 1595:8;1596:22 grams (10) 1468:16,19,22,22,23; 1513:4,11,15;1527:12, 14 grandmother (1) 1472:3 grandmother's (1) 1471:26 graphing (1) 1589:4 grass (1) 1497:1 greater (17) 1464:23;1465:1; 1528:15,16,18; 1537:19;1540:8; 1554:2,4;1556:13,16, 17,18;1558:5;1561:12; 1587:25;1598:8 grew (2) 1464:22;1478:8 grid (16) 1504:22,23,26; 1535:4,5,5,6,8,10; 1541:1,14;1578:12; 1591:5;1595:6,10; 1598:15 grids (1) 1504:18 grossly (1) 1429:17 ground (4) 1477:5;1496:20; 1589:17,18 grounds (1) 1456:5 group (10) 1463:25;1480:25; 1481:2,17,18,21; 1559:11;1561:8; 1564:17;1594:19 groups (3) 1476:20;1485:21; 1489:11 grunerite (1) 1560:10 guarding (2) 1569:16,18 guess (3)
---	--	--	----------	---	--

1505:11;1522:20; 1569:16 guesswork (1) 1529:14 guidance (1) 1481:7 gypsum (5) 1486:12,18,19; 1581:17,18	head (2) 1426:18;1497:16 health (9) 1473:16,19;1488:20, 24;1489:5;1498:5; 1556:15;1562:8,8 hear (13) 1422:15,20,22; 1423:18;1425:9,15; 1430:18;1431:3; 1448:7;1454:8; 1471:10;1472:26; 1598:21 heard (29) 1421:10;1422:16; 1425:5,6,7;1447:6,15; 1448:14;1450:14; 1453:15;1454:4,18,21; 1456:22,22;1464:21; 1471:9;1504:18; 1525:22;1538:11,12; 1543:7;1550:23; 1557:3;1561:22; 1562:26;1568:3; 1578:4;1598:25 hearing (5) 1421:12,20;1463:4, 11;1471:21 hears (1) 1452:14 hearsay (1) 1422:3 heat (2) 1476:3,6 heated (1) 1427:25 heavily (1) 1496:3 heavy (41) 1463:17,19;1514:22; 1515:8,9,12;1517:15, 22;1518:3;1520:12,16, 16,20,25;1521:8; 1522:2,12,24;1525:3; 1526:19,21;1527:10; 1528:1;1540:19,24; 1549:17;1568:23; 1574:10,10,13;1575:1, 6,6,8;1595:15,25; 1596:3,26;1597:4,15, 19 held (2) 1501:2;1530:3 hello (1) 1423:22 help (3) 1483:3;1486:3; 1548:11 helped (1) 1517:22 here's (2) 1466:12;1533:18 herself (1)	1460:23 hexagonal (1) 1585:3 Hi (1) 1430:13 high (11) 1489:4;1508:25; 1518:10;1535:24; 1542:3,6;1547:3; 1562:26;1563:2,3; 1567:17 higher (13) 1460:6,10,11; 1469:25;1504:4; 1515:15;1526:23,23; 1528:3;1542:7; 1553:16;1592:4; 1595:24 highest (2) 1578:21;1588:7 highly (1) 1498:10 high-rise (1) 1486:5 hire (1) 1487:5 hired (8) 1462:24;1485:25; 1486:2;1494:23; 1495:3,4;1497:9; 1507:23 hiring (1) 1491:14 historical (4) 1468:17;1531:16; 1532:1;1553:17 historically (1) 1554:24 history (3) 1460:16;1494:15,17 Hold (2) 1500:19;1517:26 holder (1) 1504:23 holding (1) 1500:22 holds (1) 1504:26 holes (4) 1460:19;1489:22,25; 1565:7 Honor (78) 1419:7,22;1420:3,7, 12;1421:14,17; 1422:11;1423:26; 1425:18,23;1426:11, 16,22;1427:4,6; 1446:11,11;1447:5; 1455:10,24;1456:2,22; 1457:6;1458:10; 1461:15;1463:7,9,24; 1464:4,15,20;1465:3; 1466:2,2,6,13;1467:6,	14,17;1468:3;1469:4, 14;1470:6,6,14; 1473:10,23;1475:6; 1500:20,25;1501:3; 1502:15,19;1510:8,14; 1516:9;1523:12,22; 1526:3,6;1532:15,17, 22;1536:18,21;1551:7; 1562:11,14;1563:13; 1570:12;1592:8; 1594:3,8,14;1596:7,18; 1598:17 hood (5) 1482:14;1569:13,18, 22,23 hope (2) 1417:3;1472:22 hopefully (1) 1499:15 hour (2) 1497:24;1516:19 hourly (2) 1497:21,23 hours (6) 1449:20;1497:16,16; 1590:26;1591:5,7 How- (1) 1568:4 huge (1) 1598:14 Huie (2) 1471:26;1473:8 human (2) 1489:8;1565:8 hundred (17) 1448:9,24,25; 1478:8;1518:2;1535:8, 9,13,22;1537:22,23; 1538:2;1544:15; 1566:10;1577:15; 1591:5;1595:19 Hundreds (1) 1515:12 hundredths (2) 1513:3,13 hygiene (9) 1474:21;1481:20; 1483:2,5,12,13;1484:2; 1491:8;1492:3 hygienist (6) 1481:22,26;1482:10, 16,18;1487:21 hygienists (6) 1481:25;1482:20,24; 1483:4,6,9 hypotheticals (1) 1594:6	1581:12,23,24;1582:6 idea (3) 1451:16;1453:16; 1458:7 identical (5) 1516:25;1522:23; 1546:26;1547:2; 1566:8 identification (9) 1462:21,23;1463:3; 1465:11;1494:9; 1529:16;1533:2; 1571:1;1572:22 identifications (1) 1546:2 identified (8) 1556:6;1557:25; 1564:2;1575:12; 1576:19;1577:23; 1580:23;1585:24 identifies (2) 1585:17,21 identify (16) 1456:8;1462:25; 1463:1,21;1490:6; 1491:24;1493:23; 1504:8,15;1509:21; 1526:20;1545:10; 1579:9;1582:4; 1596:24;1597:25 identifying (9) 1462:18;1509:20; 1524:9;1525:12; 1528:7;1529:1; 1558:22;1576:9; 1582:10 image (7) 1489:3,6;1503:14; 1520:8;1521:5; 1522:19,20 images (1) 1506:5 imaging (2) 1500:1;1503:8 immediately (3) 1471:14;1598:24,26 impartial (5) 1429:11,20;1448:5; 1451:19;1452:1 impartiality (1) 1429:3 impartially (1) 1429:8 implanted (1) 1475:16 impolite (1) 1417:21 importance (1) 1491:5 important (11) 1420:20;1428:20; 1453:14;1480:13; 1501:6;1509:6;
H				
habit (5) 1561:23,25,26; 1562:2;1572:9 habits (1) 1561:24 hair (2) 1497:12,13 haired (1) 1497:17 hand (4) 1473:25;1500:18; 1501:17;1585:2 handed (2) 1502:9;1571:2 hand-held (1) 1497:12 hands (2) 1500:22;1501:5 handwritten (1) 1585:17 happen (5) 1473:4;1482:15; 1496:12;1578:20; 1598:21 happened (7) 1448:23;1458:7; 1476:12;1556:3; 1592:6,8,9 happening (1) 1476:14 happens (2) 1495:15;1538:16 happy (4) 1418:8;1419:8; 1471:15;1473:13 hard (1) 1577:13 HARTLEY (2) 1420:3;1425:23 harvest (1) 1518:15 hatch (1) 1488:7 Hawaii (1) 1494:23 haystack (1) 1578:19 Hazard (1) 1491:15 hazy (1) 1451:22			I ID (10) 1494:21;1539:4,21; 1548:5,6;1571:20;	

1511:25;1513:26; 1549:16;1554:12; 1572:21 importantly (1) 1460:3 impossible (1) 1418:10 impressive (2) 1424:4,12 inches (1) 1501:16 include (2) 1493:23;1499:3 included (1) 1560:16 includes (1) 1462:23 including (13) 1464:19;1467:9; 1471:7;1483:6; 1487:17;1494:18,19; 1509:23;1513:15; 1523:6;1529:10; 1534:10;1552:25 inconsistent (1) 1585:26 incorporated (1) 1538:20 increase (2) 1519:23;1551:25 increased (2) 1595:6,10 incredibly (1) 1507:3 indentation (1) 1565:16 indicate (1) 1429:7 indicated (1) 1498:25 indicates (1) 1551:15 indicating (16) 1494:3;1500:11,14, 16;1501:11,15,19,21; 1502:2,23,25;1503:2,7; 1506:10;1566:17; 1587:25 indication (3) 1430:4;1497:13; 1579:5 indices (3) 1577:3,8;1580:5 indirect (1) 1560:25 individual (10) 1538:2;1541:9; 1548:19;1549:25; 1550:3;1572:4; 1577:12,14;1578:14; 1580:24 industrial (22) 1474:21;1481:20,22,	25,26;1482:2,10,16,17, 20,24;1483:2,4,5,6,8, 12;1484:2;1487:21; 1491:8;1492:3; 1581:11 industry (2) 1506:17;1507:5 infection (1) 1489:10 influence (1) 1428:26 influenced (1) 1429:5 information (6) 1447:7;1452:19; 1461:2;1470:16; 1530:23;1532:1 ingredients (3) 1486:9;1487:8; 1514:23 Initially (3) 1480:8;1534:16; 1584:7 initials (1) 1478:2 inorganic (2) 1478:19;1492:5 inquire (1) 1474:11 inquiry (3) 1417:24;1418:23; 1419:4 inside (5) 1487:23;1488:9; 1539:19;1566:11; 1569:22 inspectors (1) 1493:5 instead (2) 1508:21;1554:20 Institute (4) 1464:13;1545:20; 1546:14;1547:17 Institutes (4) 1488:20,23;1489:5; 1491:10 instructed (2) 1428:2;1562:16 instruction (1) 1471:14 instructions (3) 1425:11;1454:9,20 instrument (1) 1525:24 instruments (1) 1489:21 insulation (7) 1554:25,25;1555:3, 3,8,16,17 insurance (1) 1498:5 intensity (1) 1579:3	intentionally (14) 1432:3;1433:3; 1434:3;1435:3;1436:3; 1437:3;1438:3;1439:3; 1440:3;1441:3;1442:3; 1443:3;1444:1;1446:4 interested (5) 1485:10;1499:24; 1514:24;1543:20; 1589:8 interesting (3) 1491:3;1492:11; 1507:3 interim (1) 1458:8 internal (1) 1523:10 International (4) 1484:10;1492:6; 1521:4;1581:21 internet (5) 1457:23;1458:10; 1464:2;1523:15; 1598:22 interocular (1) 1475:17 interrupt (1) 1547:11 intervened (1) 1428:11 interview (4) 1426:3;1427:14; 1428:16;1451:3 interviewed (1) 1450:24 interviewing (1) 1426:13 intestines (2) 1489:12,18 intimidated (1) 1428:12 intimidating (1) 1428:8 into (22) 1417:24;1422:24; 1426:10;1427:16; 1430:25;1431:11; 1447:8;1451:17; 1475:16;1477:7; 1479:16;1482:2; 1484:1;1492:16; 1494:5;1496:20; 1497:1;1503:1;1518:6; 1522:7;1538:20; 1570:18 introduce (1) 1474:16 introduction (1) 1562:17 intrusive (1) 1426:26 invective (1) 1428:3	investigation (1) 1459:20 investigations (1) 1447:11 investigator (2) 1459:14,17 invited (2) 1483:10;1516:7 invokes (2) 1447:10,23 involve (1) 1495:23 involved (10) 1447:17;1476:18; 1477:13;1478:25; 1480:24;1481:26; 1483:12;1485:2; 1495:25;1507:20 involves (2) 1470:22;1524:21 involving (1) 1462:1 ion (1) 1489:23 iron (10) 1527:2,3,5,7,21; 1541:16,22;1553:16, 22;1571:24 irrelevant (1) 1461:8 ISO (11) 1463:18;1492:6,8; 1520:24;1560:24; 1564:4;1574:9,25; 1575:1,7;1590:18 ISO/ASTM (1) 1465:12 issue (15) 1418:4,20;1425:26; 1428:7;1451:18; 1456:16;1462:15; 1467:24;1469:2; 1472:7;1473:16; 1480:6;1519:21; 1553:5;1564:22 issues (15) 1420:11,20,22; 1421:4,6;1422:3,21; 1423:9;1447:10; 1467:14;1469:5; 1481:6;1483:13; 1485:22;1489:2 Italian (12) 1469:11,12;1470:9, 12,12,16;1531:14,17, 21;1532:10;1576:4,6 Italy (2) 1575:24,24	J&J's (1) 1450:25 J4-1 (1) 1559:3 JBP (2) 1539:7;1585:18 Jersey (1) 1487:20 jeweler's (1) 1513:2 JJBP (1) 1462:9 JJBP's (1) 1462:3 Johnson (170) 1424:10,10;1446:25, 25;1447:22,23; 1450:25,25;1451:4,4; 1455:12,12;1463:20; 1464:10,11,16,20; 1465:1,2,3,4,9; 1466:20,20,22,22,23, 24;1467:15,15; 1468:16,16,20,21; 1521:7,7,15;1522:5,5, 19,19;1524:8,8,17,17, 18,18;1525:8,8; 1528:4;1529:19,19,23, 24;1530:3,3,5,6; 1532:2,2,7;1534:10,23, 23;1536:15,24,24; 1537:15,16;1538:7; 1539:12,12,15,15; 1547:2,2;1548:12,12; 1555:6,7;1557:2,3,3,9, 9,10,21,21,23;1558:9, 15,16,21,25,25;1559:6, 8,17,18;1560:3,4,12, 21,21;1561:5,18,23; 1562:3;1563:3,6,15; 1564:19,19;1565:2,2; 1569:11,11;1570:5,5,7, 7,8,8,24,25,25;1571:5, 5,14;1573:3,3,3,3,4,4, 21;1575:10,10,11,11; 1579:12,13;1582:16; 1583:
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February 25, 2019

1547:7;1550:12; 1551:15,17;1552:18, 24;1556:5,23;1557:2, 11,24;1558:9,21; 1559:6,8,14,21; 1560:12;1561:6,18,23; 1562:4;1563:3,7,15; 1564:2;1567:6,20; 1570:24;1572:1; 1573:2,12,21;1576:11; 1581:2,6;1582:3,16,22, 25;1583:24;1584:2; 1585:13,25;1588:9; 1589:21;1591:14,18; 1593:13,14,23,26; 1594:20;1595:2,4,21, 23;1597:4	1470:20;1471:14,19; 1472:18,19;1474:16, 17;1478:15;1480:5; 1491:4;1493:15; 1494:15,17;1498:25; 1504:17;1505:12; 1520:21;1521:6; 1522:4;1523:18,19; 1524:1,3,15,16; 1528:25;1538:11,12; 1546:18;1548:11; 1550:22;1557:3,19; 1558:7,24;1561:22; 1562:15,26;1568:3; 1570:16,18,19,21; 1571:6,20;1576:3,9; 1578:4;1590:2; 1595:20;1598:19; 1599:3,4	1429:19;1470:24; 1471:2;1482:2 known (15) 1464:11;1467:11; 1468:14;1484:10; 1486:15;1491:9; 1496:2;1504:9,12; 1514:22;1521:15; 1544:26;1546:6; 1570:8;1584:6 knows (1) 1455:5 KURLAND (2) 1446:21;1455:10	1446:16;1473:8; 1475:15;1476:10; 1492:23;1493:8,12; 1498:22;1561:3; 1566:13;1569:9; 1574:12;1595:5; 1598:4 late (3) 1480:10;1506:23; 1529:3 Later (8) 1422:12;1449:21; 1501:2;1507:19; 1519:26;1539:14; 1585:9;1590:15 lattices (1) 1504:7 law (12) 1417:13;1418:3; 1464:1;1466:4;1467:2; 1495:8,11,16,23; 1530:16,21;1575:18 lawsuit (1) 1495:18 lawsuits (2) 1447:24;1465:10 lawyers (3) 1417:4;1427:18; 1431:12 lay (2) 1467:25;1563:12 laying (2) 1540:10;1584:8 lead (1) 1511:9 Leading (2) 1521:18;1598:2 leak (3) 1482:9,12,12 learn (2) 1475:18;1477:18 learned (1) 1532:6 learning (1) 1428:5 least (7) 1473:18;1528:17; 1561:14;1565:8; 1588:15;1591:16,24 leave (5) 1427:15;1451:16; 1478:23;1551:20; 1565:11 Lee (2) 1564:17;1594:19 left (22) 1432:3;1433:3; 1434:3;1435:3;1436:3; 1437:3;1438:3;1439:3; 1440:3;1441:3;1442:3; 1443:3;1444:1;1446:4; 1505:20;1515:19; 1541:10;1543:18;	1546:16,22;1548:21; 1588:23 left-hand (3) 1548:18;1552:2; 1565:13 length (14) 1528:14,15,17; 1537:16;1540:7; 1546:23;1548:15; 1556:10,14;1558:5; 1561:13;1572:16; 1577:9;1582:7 lens (1) 1475:17 lenses (5) 1500:3;1502:6,24, 25;1503:13 less (11) 1476:2;1503:6; 1514:14;1537:9,10; 1550:24;1551:11,12; 1555:9;1558:20; 1588:2 level (4) 1491:1;1498:12; 1536:6;1589:24 Libby (6) 1486:11;1496:2,5; 1554:19,26;1555:2 life (1) 1460:24 light (34) 1426:14;1499:22,23, 24;1500:5,10,14; 1501:10,13,16;1502:1; 1506:7;1508:16; 1514:6;1517:16; 1521:2;1549:3,3; 1554:25;1574:6,17; 1575:3,8;1576:16,20, 25;1577:1,5,9,17; 1579:19;1580:4,20; 1581:1 lighter (3) 1476:2;1503:10; 1583:18 lighting (1) 1461:10 lightly (1) 1418:4 lights (1) 1501:24 likely (2) 1447:2;1519:18 limine (4) 1421:18;1456:3,4; 1463:12 limit (39) 1510:5,18;1511:7, 16;1512:21,22;1513:5, 12,17,20;1518:23,23, 25,26;1519:4;1526:8; 1527:23;1535:21;
Jose (1) 1478:10 journals (1) 1483:2 joy (1) 1506:2 Judge (11) 1423:22,23,23; 1427:12;1453:11,11; 1461:18,25;1462:8,10, 14 judges (3) 1453:8,10,13 judgment (1) 1461:18 jumper (2) 1490:21;1491:1 juror (70) 1417:9,17,17,18,19; 1418:8,11,14,19,21,24; 1419:16;1420:20,22; 1421:4;1424:2,16,24; 1425:2,12;1426:11,14, 17;1427:2,6,14,17,25; 1428:6,7,7,9,15,17,21; 1429:3,6,16,17,25; 1430:2,3,3,4,6,8,10,13, 20;1447:6;1449:22,23; 1452:4,5,10,17; 1453:25;1454:1,11,23, 25;1471:25;1472:9; 1473:7,9,10,14,15,17, 19 jurors (14) 1417:22,26;1428:10, 16;1451:4;1453:8; 1455:14;1471:3; 1472:8,25,25;1524:2; 1570:17,20 juror's (4) 1429:11,18;1447:1; 1451:10 jury (60) 1427:15,20,24; 1428:2;1429:25; 1456:22;1457:14;	K keep (10) 1424:26;1425:4; 1427:2;1454:1,3,19; 1513:6;1523:14; 1581:15;1598:26 keeping (1) 1515:17 Kent (1) 1507:13 kept (4) 1466:23;1493:8; 1530:21;1573:3 key (10) 1466:12,19;1468:6; 1469:3;1509:8;1510:2; 1536:9;1585:16,17,20 keys (1) 1585:25 kind (20) 1449:18;1458:24,25; 1469:23;1475:14; 1476:24;1479:2; 1488:18;1489:15; 1490:2;1500:6;1506:7; 1521:25;1523:16; 1547:3;1555:26; 1569:13,13;1579:3; 1595:24 kinds (2) 1545:25,25 kitchen (1) 1484:17 knee (1) 1475:17 knew (1) 1507:26 knobs (1) 1505:26 knowing (1) 1461:21 knowledge (4)	L lab (26) 1459:14;1480:14,15, 16,16,17,19;1487:11; 1488:12;1489:21; 1490:7,9,22;1491:5,23; 1492:10,12;1493:5,6; 1504:4;1505:4; 1508:19;1544:24; 1545:11;1546:5; 1568:25 label (1) 1540:1 labels (1) 1486:7 laboratories (4) 1478:9;1479:5,25; 1491:6 laboratory (9) 1478:13;1491:9; 1492:1;1556:24; 1560:13;1568:3,8,10, 13 labs (6) 1467:19;1478:11; 1507:4,23;1508:7; 1545:26 lacks (1) 1457:20 ladies (1) 1546:17 laid (1) 1458:9 Lakefield (1) 1474:8 language (1) 1526:7 Lard (1) 1507:13 large (5) 1487:17;1495:2; 1532:20,25;1578:13 largest (1) 1484:11 laser (1) 1502:10 last (14)	law (12) 1417:13;1418:3; 1464:1;1466:4;1467:2; 1495:8,11,16,23; 1530:16,21;1575:18 lawsuit (1) 1495:18 lawsuits (2) 1447:24;1465:10 lawyers (3) 1417:4;1427:18; 1431:12 lay (2) 1467:25;1563:12 laying (2) 1540:10;1584:8 lead (1) 1511:9 Leading (2) 1521:18;1598:2 leak (3) 1482:9,12,12 learn (2) 1475:18;1477:18 learned (1) 1532:6 learning (1) 1428:5 least (7) 1473:18;1528:17; 1561:14;1565:8; 1588:15;1591:16,24 leave (5) 1427:15;1451:16; 1478:23;1551:20; 1565:11 Lee (2) 1564:17;1594:19 left (22) 1432:3;1433:3; 1434:3;1435:3;1436:3; 1437:3;1438:3;1439:3; 1440:3;1441:3;1442:3; 1443:3;1444:1;1446:4; 1505:20;1515:19; 1541:10;1543:18;	1546:16,22;1548:21; 1588:23 left-hand (3) 1548:18;1552:2; 1565:13 length (14) 1528:14,15,17; 1537:16;1540:7; 1546:23;1548:15; 1556:10,14;1558:5; 1561:13;1572:16; 1577:9;1582:7 lens (1) 1475:17 lenses (5) 1500:3;1502:6,24, 25;1503:13 less (11) 1476:2;1503:6; 1514:14;1537:9,10; 1550:24;1551:11,12; 1555:9;1558:20; 1588:2 level (4) 1491:1;1498:12; 1536:6;1589:24 Libby (6) 1486:11;1496:2,5; 1554:19,26;1555:2 life (1) 1460:24 light (34) 1426:14;1499:22,23, 24;1500:5,10,14; 1501:10,13,16;1502:1; 1506:7;1508:16; 1514:6;1517:16; 1521:2;1549:3,3; 1554:25;1574:6,17; 1575:3,8;1576:16,20, 25;1577:1,5,9,17; 1579:19;1580:4,20; 1581:1 lighter (3) 1476:2;1503:10; 1583:18 lighting (1) 1461:10 lightly (1) 1418:4 lights (1) 1501:24 likely (2) 1447:2;1519:18 limine (4) 1421:18;1456:3,4; 1463:12 limit (39) 1510:5,18;1511:7, 16;1512:21,22;1513:5, 12,17,20;1518:23,23, 25,26;1519:4;1526:8; 1527:23;1535:21;

1536:7,9,11,13,23; 1537:3,4,10,11; 1590:19;1591:18; 1592:11,16,23; 1593:10;1594:24,26; 1595:3,20;1596:21,23 limitation (1) 1525:9 line (5) 1459:3;1474:19; 1539:17;1588:4,11 liquid (47) 1463:17,19;1514:23; 1515:8,10,10,13; 1516:4;1517:11,15,22; 1518:3,13;1520:12,16, 16,20,25;1521:8; 1522:2,12;1525:4; 1526:19,21;1527:10, 17,20;1528:2;1540:19, 25;1549:17;1568:23, 24;1574:10,10,13; 1575:1,6,7,8;1595:15, 26;1596:4,26;1597:4, 15,20 list (1) 1538:5 listed (1) 1538:6 listen (1) 1526:5 literally (4) 1466:8;1477:15; 1502:23;1577:5 literature (14) 1462:21;1463:3,16; 1467:8;1468:10; 1469:9;1470:8,15; 1482:25;1484:5; 1508:13;1517:12; 1521:15;1523:9 litigation (10) 1461:17;1486:21; 1494:16,18;1497:10, 21;1499:2;1563:17,21; 1594:20 little (41) 1426:5,26;1428:2; 1430:16;1448:6,8,10, 12;1451:2,22;1452:3, 6;1473:18;1476:26; 1479:3;1488:7; 1490:21;1502:8; 1504:18;1510:24; 1515:26;1517:26; 1523:2;1538:14,23,25; 1540:9;1541:15; 1543:3,17;1547:8; 1549:17;1550:4; 1551:26;1554:16,22; 1555:21;1568:20; 1573:16;1577:13; 1584:5	live (1) 1474:18 lived (1) 1459:24 LLC (1) 1429:22 load (2) 1519:8,14 loading (1) 1519:16 lobby (2) 1492:22,24 logo (1) 1493:11 long (17) 1420:19;1424:13; 1450:5;1458:5,6; 1479:4,21;1506:15,15; 1521:12;1537:19; 1545:6;1554:2;1561:8; 1577:12;1578:11; 1586:8 longer (3) 1418:11;1450:15; 1556:9 Longo (108) 1420:16,16,18,23; 1421:7,19,22;1422:15, 21,22,22,23;1455:25; 1456:4,18;1457:1,13, 19;1458:19,25; 1459:12;1460:4,6,7,18; 1461:16,21,22;1462:4, 15,19,20,24;1463:2,19, 23,24,25;1464:4,11,15, 25;1465:7;1466:4,13, 15,21;1467:10,25; 1468:7,9,13;1469:7,12; 1470:8,11;1473:24; 1474:8,14,18;1479:12, 21;1480:5;1493:14; 1494:10;1495:7; 1496:14;1497:9; 1501:5,9;1502:15; 1504:17;1505:3; 1509:10;1510:13,17, 22,24,25;1511:19,22; 1512:9;1513:22; 1520:11;1524:7; 1528:4;1529:15,18; 1532:20;1537:13; 1547:23;1549:22; 1551:13;1563:15,25; 1564:18;1570:4,23; 1571:4;1579:11,25; 1589:19;1590:3,25; 1591:13;1596:3,21; 1597:14 Longo's (12) 1421:16;1456:17; 1459:14;1461:13,20; 1462:8,17,17;1463:14; 1465:11;1467:6;	1468:23 look (59) 1424:15;1456:12; 1458:10;1464:14,23; 1465:3;1467:5;1481:5, 10;1488:10;1489:8; 1491:20,20,25; 1492:17;1498:15; 1500:8,13,15;1504:2,5; 1505:18;1506:4,5,7; 1507:24;1508:8,25; 1509:4;1512:6;1514:2; 1515:19;1518:20; 1519:20;1520:8; 1530:14;1531:6,7; 1535:8;1539:19,20; 1540:20,22;1546:24, 26;1551:13;1564:21; 1565:14;1574:5; 1576:15,16;1577:7; 1580:22;1581:22; 1585:8,24;1588:6; 1591:5;1598:14 looked (20) 1453:6;1493:1,1,5; 1499:21;1534:18; 1536:13;1543:8; 1547:5,14;1551:15; 1552:25;1553:18; 1559:4;1571:17; 1580:25;1591:8; 1594:22;1595:6; 1596:2 looking (50) 1458:3;1485:16; 1489:12,14;1500:2; 1504:19,22;1505:24; 1508:4;1512:6; 1513:22,26;1515:24; 1517:7;1521:26; 1525:20;1526:7,9; 1527:15;1529:22; 1530:1;1533:1;1534:9; 1535:4,7;1536:19; 1541:25;1543:10,11, 14;1548:2,2;1549:9,10, 20,21;1550:2,17; 1551:26;1554:10; 1557:26;1559:6; 1563:25;1565:1; 1567:5;1569:13; 1573:2;1585:3; 1592:12;1595:10 looks (14) 1467:5;1503:10; 1505:6;1508:26; 1516:4;1546:4,6; 1551:18;1553:11; 1569:15;1578:18; 1579:11;1588:18; 1595:7 Lorillard (1) 1507:23	Los (2) 1478:10;1494:24 lot (22) 1452:1,19;1456:19; 1475:15;1476:12,26; 1483:12;1486:3; 1489:13;1491:11; 1495:15;1500:4; 1505:6;1509:5;1529:8; 1530:18;1538:11; 1578:18,18;1580:7,20; 1581:22 lots (1) 1490:11 loud (1) 1474:6 love (1) 1477:25 low (3) 1475:9;1526:8; 1567:17 Lower (6) 1507:13;1513:12; 1552:2;1554:16; 1576:1;1595:22 lowest (4) 1513:21;1536:4,6,11 lunch (2) 1523:14,21 luncheon (1) 1523:23	18,19;1553:15 magnification (2) 1505:19;1551:25 magnifications (2) 1504:5;1508:25 magnify (3) 1499:24;1500:3,12 majority (2) 1517:19;1530:18 makes (2) 1458:20;1514:25 makeup (1) 1484:22 making (4) 1482:6;1484:11; 1490:9;1545:7 man (1) 1459:18 MANA (2) 1486:13,20 mandatory (3) 1463:21;1522:6,13 mannequin's (1) 1497:16 manufactured (2) 1486:4;1581:18 manufacturer (3) 1482:6;1486:12,22 manufacturers (6) 1486:16,22;1487:2; 1490:5,9;1581:24 manufacturing (1) 1484:16 many (24) 1426:23;1455:3; 1460:13;1465:12; 1467:22;1474:19; 1481:14;1484:17; 1494:10;1515:4; 1518:23;1529:20; 1531:7;1533:5; 1534:13,13;1535:12; 1536:4;1537:19; 1544:18;1550:16,18; 1571:10;1581:8 map (1) 1494:2 March (1) 1557:20 mark (1) 1493:9 marked (4) 1479:12,20;1529:15; 1570:25 marketed (1) 1468:5 MAS (6) 1478:2,6,6;1482:21; 1498:23;1596:3 mass (1) 1477:22 master's (2) 1477:9;1498:12
			M	
			M65205-001 (2) 1460:5;1539:21 M65205-001-075 (1) 1543:11 M65329-041 (1) 1548:4 M66173 (1) 1551:14 M66214 (1) 1552:8 M66510 (2) 1553:6,23 M66510-001 (1) 1554:8 M66514 (2) 1552:8,16 M69042-001-004 (1) 1582:23 M69042001BL-001 (1) 1579:10 M69042-002 (1) 1583:7 magical (1) 1596:3 magma (1) 1538:17 magnesium (12) 1541:15,17;1542:4, 7;1543:2,4;1547:3,7,9,	

match (3) 1459:25;1528:19; 1561:15	1453:23;1511:11; 1584:11;1591:6	1514:4,13,16,18,18; 1517:16,18,23; 1518:20,22;1519:3; 1520:13,21,24;1521:4, 11;1522:2;1523:6; 1524:18;1525:9,21; 1526:8,13,19,21; 1529:1,10,11,12,13; 1540:20;1556:7; 1557:2,3,6,11,21; 1558:11,14;1559:3,3; 1561:2;1574:4,8,9,15, 16,21,24;1575:4,7,14; 1576:20;1577:25; 1589:5,21;1590:18,18, 26;1591:14,15; 1592:17;1593:14,20, 21;1594:23;1595:3,15, 23,23,26;1596:4,23,26; 1597:4,5,14,15,19,20, 25;1598:8	1578:10 Micronite (1) 1507:13 microns (4) 1501:11;1550:24; 1556:10,14 microscope (48) 1464:7;1477:14; 1483:5;1494:6; 1499:12,15,22,25; 1500:9,12;1501:12,18, 23;1502:17;1503:4; 1504:22,24;1505:4; 1506:19,23;1507:11, 12,25;1508:8,16,16,18, 24;1514:11;1519:10; 1521:2,2,3;1540:4,17; 1541:6;1544:7; 1551:23;1553:9; 1571:18,19;1574:6,6, 17,22;1575:3;1578:5; 1581:1 microscopes (4) 1489:5;1506:16; 1508:21;1511:15 microscopic (6) 1489:22;1491:1; 1503:5;1504:3;1509:6; 1541:10 microscopist (2) 1534:1;1551:21 microscopists (3) 1478:20,21,22 Microscopy (20) 1464:18;1477:21,21, 22;1479:26;1489:2; 1507:5;1508:22; 1514:6,7,22;1517:16; 1528:9;1560:14; 1574:2,9;1575:8; 1576:16,20;1591:7 microsurgery (1) 1490:17 microvilli (3) 1489:12,15,17 mid (1) 1549:9 middle (8) 1505:16;1506:11; 1516:7,20;1540:10; 1542:2;1548:23; 1579:9 might (12) 1423:13,17;1429:7; 1430:23;1431:3; 1448:9;1450:10; 1451:1;1454:24; 1473:17;1475:12; 1512:7 milled (3) 1567:12;1589:15,16 milligram (1) 1586:13	milligrams (1) 1518:3 millimeter (2) 1504:26;1535:11 millimeters (1) 1535:11 million (19) 1427:12;1498:20,23; 1504:6;1519:6,6,24; 1535:22,24;1537:22; 1591:9,23;1592:4,5; 1593:18;1595:8,12,12, 13 millions (3) 1458:22,22,22 mind (26) 1425:4,16;1426:25; 1428:25;1448:13,15, 22;1449:11,13,18,20, 21;1451:14,25;1452:6, 7;1453:3,21;1454:3,20, 21,25;1455:3;1502:12; 1523:14;1598:26 minds (2) 1451:20;1596:14 Mine (7) 1556:15;1572:23,25; 1573:14;1575:20; 1581:25;1588:7 mineral (3) 1487:24;1538:20; 1582:13 mineralogist (1) 1478:22 mineralogists (1) 1498:13 minerals (9) 1456:8,13,15,17; 1457:10;1475:2; 1522:24;1555:22; 1589:23 mines (3) 1553:5;1576:10; 1581:20 minimum (3) 1537:5;1548:15; 1590:6 mining (1) 1496:6 minor (3) 1533:14,15,23 minus (1) 1518:14 minute (3) 1431:13,13;1532:15 minutely (1) 1502:3 minutes (16) 1417:12;1419:3,5,6; 1421:22,23;1424:14; 1431:5,7;1450:5,10,13, 16;1455:8;1570:10,14 misabeled (1)
material (54) 1461:23;1465:2; 1474:20,22;1475:13, 18,25;1476:3,5,9,11, 15,16,18,22,25;1477:2, 3,8,9,11,18;1478:16, 18;1483:11;1487:6; 1488:25;1497:25; 1498:16;1499:10; 1504:19;1505:4; 1514:24;1515:7,23; 1519:9,21;1531:16; 1533:5,9;1540:15; 1544:5;1547:21; 1558:25;1559:8; 1561:19;1563:16; 1575:12;1576:19; 1587:4;1589:17,17; 1590:13;1595:15	means (6) 1518:23;1519:3; 1525:23;1539:24; 1548:2;1561:25 measure (4) 1511:21;1512:15,23; 1513:2 measured (1) 1512:4 measurements (2) 1482:11;1484:2 measuring (2) 1493:17;1512:13 mechanical (1) 1476:21 median (2) 1460:10,12 medium (2) 1469:25;1577:3 meet (1) 1481:23 meets (11) 1465:9;1529:12; 1540:6;1544:2; 1546:21;1548:15; 1562:5,5;1582:18; 1583:4,4 Members (1) 1598:18 Mendez (7) 1423:22,23;1461:20, 25;1462:8,10,14 Mendez's (1) 1461:18 mention (3) 1423:25;1450:22; 1462:16 mentioned (2) 1446:25;1450:22 mesh (1) 1567:11 met (4) 1481:3;1556:18; 1577:17;1582:7 metal (7) 1460:18;1476:24; 1531:5,8;1566:14,22; 1567:2 metallurgy (1) 1474:26 metals (1) 1474:26 meters (1) 1540:11 method (104) 1461:1;1462:22; 1463:16,18,19,20; 1480:11,15,16,17,18, 19;1485:14;1491:15, 17;1510:6;1511:11,13, 21;1512:8,21;1513:25;	methodologies (2) 1509:17;1556:20 methodology (14) 1456:8,12;1457:17; 1462:17,18;1463:10, 14;1464:6,17,23; 1467:19;1468:8; 1534:24;1560:24 methods (29) 1480:10,13,22; 1484:12,13;1485:1; 1491:14;1509:25,26; 1512:19;1514:9; 1519:5;1520:23; 1522:8;1528:9; 1529:10;1559:26; 1560:13,25,26,26; 1561:17;1574:7,14; 1575:4,6;1578:1; 1590:17;1591:19 Mg (1) 1541:17 Micro (3) 1479:5;1494:1; 1540:11 microbiologist (1) 1478:23 microbiologists (1) 1498:13 microbiology (2) 1461:24;1477:7 microchemistry (1) 1504:9 micrographs (1) 1550:18 micrometer (1) 1489:25 micrometers (12) 1528:16;1540:7; 1548:14;1551:11; 1554:2,3;1556:17,18; 1561:13,13;1577:11;		

February 25, 2019

1533:20 mislead (1) 1457:14 miss (1) 1473:17 misspelling (1) 1513:24 mix (1) 1475:12 mixture (1) 1555:20 mode (2) 1489:9;1579:20 model (3) 1504:4;1505:5; 1506:18 modern (1) 1531:6 modified (1) 1427:21 moment (4) 1420:9;1472:24; 1496:13;1501:2 money (2) 1497:25;1498:15 montage (1) 1572:20 Montana (6) 1486:11;1496:2,5; 1554:20,26;1555:2 months (4) 1481:5,13;1533:5,7 more (57) 1423:13;1427:4; 1447:2,19;1450:13; 1454:15;1460:3; 1464:25;1471:25; 1480:11;1481:25; 1482:14;1484:1; 1508:7;1511:14,14,14; 1512:21;1513:8,10,18; 1514:9,11,14;1515:6,7; 1516:24;1517:4,16,18; 1518:8;1519:14,21; 1523:3;1526:4;1527:5, 5,25;1531:6;1538:23; 1549:2,15,25;1550:4; 1558:17,20,23; 1560:18;1561:26; 1578:5,18;1579:3,4; 1589:22;1590:24; 1596:24;1597:13 morning (21) 1417:2,7,8;1419:3; 1421:16,22;1424:3,7, 11;1446:15,19;1447:7; 1448:2;1449:8,19; 1455:12;1461:15; 1474:14,15;1598:20; 1599:2 morphology (2) 1456:25;1544:2 most (14)	1420:10;1423:15; 1457:23;1462:5; 1470:24;1479:13; 1485:14;1492:10,24; 1514:25;1519:18; 1544:22;1578:14; 1586:4 mostly (3) 1554:21;1576:6; 1581:11 motion (10) 1421:18;1422:15,16; 1454:23;1455:25; 1456:3,4;1458:9; 1463:12;1471:22 motions (1) 1421:20 move (10) 1422:13;1430:9; 1455:22;1488:9; 1505:23;1506:2; 1510:8;1552:8;1594:8; 1596:5 moves (1) 1479:15 Mrs (1) 1468:25 MSHA (1) 1556:15 much (36) 1420:2;1425:14; 1430:15;1467:24; 1468:15,16;1472:21; 1478:24;1493:20; 1498:17;1504:3; 1505:8;1508:18; 1509:5;1511:8;1514:7; 1515:6;1518:19; 1519:8;1523:17; 1525:23;1526:23; 1530:24;1535:15; 1542:7;1555:25; 1570:22;1578:4; 1584:4;1591:11; 1595:22,24;1597:25; 1598:18;1599:2,6 multiple (2) 1550:14;1572:4 multiplies (1) 1458:21 multiply (1) 1586:15 museum (3) 1466:24;1570:8; 1573:4 must (7) 1417:6;1418:23; 1428:23;1429:17; 1482:9,12;1598:24 myself (4) 1419:18;1453:15; 1478:19;1487:21	N name (5) 1459:13;1474:7,18; 1477:23;1499:5 nanograms (1) 1519:15 nanometers (1) 1579:20 NASA (1) 1489:19 Nassau (1) 1429:22 National (10) 1464:13;1488:20,23; 1489:5;1491:9,10; 1545:20,23;1546:14; 1547:16 NBC (1) 1446:15 necessarily (1) 1427:5 need (18) 1418:3;1421:7,9,11, 21;1423:13;1448:18; 1449:11;1455:4; 1475:5;1489:13; 1493:10;1506:5; 1527:24;1560:17; 1578:15;1579:9; 1596:20 needed (5) 1426:14;1481:8,12; 1489:24;1517:10 needle (1) 1578:19 needles (1) 1586:9 needs (2) 1421:15;1472:9 negative (2) 1485:17;1578:2 nerd (1) 1477:25 neutral (2) 1451:25;1452:23 New (42) 1423:24;1426:22; 1427:10;1461:16,16; 1462:24,25;1471:16; 1475:13,22;1476:7,9, 24;1481:25;1485:23, 23,25;1486:2,21,23; 1487:5,9,16,19,20; 1488:14,15,16; 1494:18,25,25;1498:7; 1505:5,11;1507:9,24; 1509:23,24;1545:13; 1552:13;1581:20,25 newly (1) 1447:13 news (2)	1447:15;1471:25 newspaper (1) 1598:22 next (25) 1418:13;1419:21; 1420:23;1443:5; 1451:11;1465:13; 1473:7,22;1481:12; 1483:14;1503:16; 1523:24;1542:11; 1543:22;1549:20; 1551:13;1554:6; 1557:18;1564:24; 1572:12;1577:11; 1579:11,18;1580:15; 1584:13 nice (1) 1495:9 NIST (6) 1467:11;1546:7; 1587:6,19;1589:10,18 nitrite (1) 1507:18 nitrogen (3) 1496:21;1518:14; 1568:24 nobody (3) 1431:7;1550:17; 1572:6 nomenclature (1) 1554:19 non (3) 1512:16;1590:24; 1591:6 non-asbestiform (1) 1456:14 nonasbestos (1) 1590:16 non-detect (1) 1537:5 nondetectable (2) 1512:16,17 none (3) 1461:1;1569:10; 1581:24 nonquantifiable (3) 1590:3;1591:16; 1593:20 normally (2) 1468:17;1588:2 North (1) 1478:9 noted (1) 1461:25 notice (3) 1422:8;1579:2,14 noting (1) 1451:6 novel (2) 1463:10,15 November (2) 1461:19;1492:23 number (62)	1417:9,17,18,19; 1418:8,11,14;1419:16; 1424:2,16,24;1425:12; 1426:11,14,17;1427:2, 6,25;1428:6,7,16,21; 1430:8;1447:6; 1450:17;1452:4,5,10, 17;1454:11,24,25; 1456:5;1459:5,5; 1461:20;1471:25; 1482:26;1484:22; 1492:10,12,18; 1497:15,18;1529:19; 1530:20;1532:23; 1534:25;1538:6; 1547:13;1548:7; 1550:3;1552:14; 1569:3;1571:17; 1572:15;1583:25; 1590:4,7,8,10;1595:10 numbered (1) 1546:11 numbers (4) 1460:9,9;1579:9; 1598:15 nutrients (2) 1489:15,16 nutshell (1) 1513:19 NVLAP (1) 1493:9 NY3d (1) 1428:22 NYSCEF (1) 1461:19
O				
object (7) 1423:13;1536:20; 1551:3;1560:15; 1563:20;1592:9; 1594:5 objecting (1) 1563:9 objection (13) 1427:13;1455:18; 1479:17;1521:18; 1526:3;1532:14; 1536:18;1562:11; 1592:20,26;1596:5; 1598:3,11 objections (3) 1422:5;1423:5,18 obscure (1) 1520:13 observe (1) 1572:17 observed (1) 1447:6 obtain (1) 1529:18 obtained (5)				

February 25, 2019

1458:1;1464:2; 1471:2;1493:4;1570:6 obviously (1) 1472:4 occasionally (3) 1515:19;1516:7; 1578:19 occurred (1) 1468:8 o'clock (2) 1430:23;1523:11 October (2) 1479:9;1573:1 odd (1) 1544:15 off (43) 1450:1;1458:2,14; 1459:12;1466:6,9,17; 1472:9,14;1473:11; 1496:17;1502:15; 1503:15;1506:12; 1510:13;1515:18; 1518:11,15;1525:23; 1529:25;1530:8,10,18, 22;1541:13;1565:6,8,9, 10,12,15,17,19,21; 1566:15,16;1567:1,7, 15,19,21;1580:6; 1588:8 office (1) 1499:23 OFFICER (15) 1430:10,21,22; 1431:13;1450:25; 1471:25;1472:11,13, 18;1473:7;1523:18; 1524:1;1570:16,19; 1599:3 offices (1) 1478:10 off-the-record (1) 1532:16 often (2) 1453:15;1471:15 old (4) 1457:23;1475:22; 1515:5,11 older (2) 1530:1;1566:13 oldest (1) 1460:17 Olson (10) 1459:22,24;1460:20, 21;1461:3,12;1468:25; 1469:22;1470:12,17 Once (12) 1418:6;1420:22; 1421:4;1422:15; 1425:2;1454:2; 1488:18;1491:19,19; 1496:20;1503:11; 1598:20 one (193)	1417:15,20;1418:20, 21;1419:10;1420:5,7; 1423:9;1425:17; 1426:19;1427:9; 1430:5;1431:6,12,13; 1448:9;1450:6; 1452:22;1456:6; 1457:11;1458:1,1,19, 23;1459:2;1460:16; 1463:25;1464:24; 1465:1;1468:5; 1469:19,20,21,24; 1472:7,8,9;1474:19; 1479:24;1480:8; 1482:4;1485:14,17; 1486:12,19;1487:1,2, 25;1489:4;1490:4,4,19, 19;1491:12;1493:9,16; 1495:11;1498:18; 1499:12;1500:11; 1504:4;1505:12,13,26; 1506:8;1507:8,10,15; 1508:17,20;1512:9,15, 26;1513:3,4,6,7,13,16; 1515:14;1516:6,25; 1518:24,25;1519:2; 1528:8,18,23;1535:22; 1536:7,8;1537:20,22, 24;1538:1,6,12;1540:1, 13;1543:21;1544:19, 20;1546:21;1547:12; 1548:16;1549:16; 1550:12,15,15,17,20; 1552:15;1553:12; 1554:3,5,5,11,12; 1557:15;1558:6,8,16, 17;1559:7;1561:3,7,11, 12,14,17;1564:10,16; 1565:21,22;1566:6,13, 15,17,21;1567:15; 1568:13;1570:6; 1571:22,23;1572:25; 1574:12;1575:21,21, 22;1577:11,15,16,16, 23;1578:2,6;1579:4,11, 14;1580:15,21; 1581:12;1583:3,4,5,7, 12,18,22;1584:3,3,6; 1585:6,7;1586:5; 1587:15,21;1588:2,15, 17,19,26,26;1589:23; 1590:11,19,19,24; 1591:8,24,25;1595:25; 1598:12 ones (11) 1529:25;1530:1,22; 1531:6;1536:1,4,5; 1544:22;1567:7; 1575:24;1588:2 only (44) 1418:26;1425:2,8,9; 1431:12;1446:23,24; 1447:18;1450:7;	1451:19;1453:16; 1454:1,7,8,16,17; 1461:8;1464:25; 1467:17,24;1486:12; 1501:12;1506:3; 1512:4;1519:7,8; 1527:6;1530:10; 1537:2;1545:24; 1550:15;1554:14,18; 1555:21;1558:8; 1560:24;1565:16; 1574:2;1577:23; 1580:21;1586:14; 1587:25;1590:26; 1591:10 onto (3) 1497:3,7;1519:14 open (9) 1425:4;1447:4; 1454:3,19;1459:18; 1484:18;1523:14; 1555:11;1598:26 opened (4) 1457:23;1478:6; 1494:13;1545:12 open-ended (1) 1448:1 opening (1) 1552:20 openings (8) 1504:18;1535:8,10; 1541:1;1591:5;1595:7, 10;1598:15 opinion (5) 1429:4;1452:24,25; 1461:21;1591:3 opinions (11) 1418:16;1421:24; 1429:7;1456:10; 1471:2,3,4,5,6,8; 1495:13 opposed (2) 1430:6;1558:16 opposite (1) 1495:23 opposition (1) 1462:6 optical (7) 1477:21;1478:20; 1500:9,12;1501:12; 1522:8;1574:9 oral (2) 1424:18;1425:15 orange (1) 1579:3 order (9) 1431:6;1463:21; 1471:24;1481:22; 1506:13;1528:13; 1545:21,22;1546:2 ore (2) 1496:3,6 organic (3)	1478:19;1482:9; 1492:5 organization (2) 1484:11;1492:7 orientate (1) 1504:14 orientation (1) 1584:11 original (2) 1507:17;1593:4 originally (1) 1595:5 OSHA (1) 1556:14 others (2) 1497:11;1578:22 Otherwise (3) 1422:24;1473:3; 1554:17 ours (2) 1499:13;1586:16 out (69) 1420:15;1421:25,26; 1425:21;1426:18,24; 1427:19;1429:24; 1447:12;1448:15; 1449:11,12,17,20,21; 1451:7,20;1453:3,10; 1457:4;1458:9,11,12, 22;1459:4,9;1465:10; 1478:11,24;1482:11, 14;1485:18;1486:3; 1490:23;1492:20; 1494:3;1496:18; 1497:1;1500:8;1502:1, 4;1503:12,12,14; 1506:21;1515:23; 1517:2,3,17;1518:18; 1520:10;1521:20,21; 1522:26;1533:21; 1540:24;1551:23; 1552:5;1557:24; 1565:7;1567:20; 1569:23;1573:23; 1574:23;1575:10; 1577:8,19;1579:7; 1584:7 outlier (4) 1460:14,15,16,25 outline (2) 1579:15,16 out-of-court (2) 1563:7,10 outside (5) 1481:7;1490:11; 1494:16;1563:18; 1577:6 ovarian (1) 1447:10 over (45) 1447:15;1450:3; 1459:3;1460:12; 1468:25;1471:2;	1476:15,15;1478:7; 1479:26;1480:24; 1481:10;1484:8; 1486:25;1487:15; 1488:11;1491:20; 1493:4;1494:2,11; 1498:16,23;1499:1; 1508:24;1509:2,18,22; 1510:11;1512:6,25; 1529:19;1537:23; 1542:8,8,8;1544:15; 1545:13,13;1555:12, 12;1577:15;1581:7; 1582:11;1588:22; 1590:22 overall (1) 1528:15 overestimated (1) 1498:18 overheard (2) 1424:8;1448:3 overloading (1) 1519:4 Overruled (1) 1593:8 own (12) 1459:4;1460:9,10; 1463:20;1464:20,23; 1465:2,9;1493:19; 1508:11;1557:11; 1558:21
P				
packaging (3) 1531:2;1564:21; 1573:16 page (25) 1424:24;1432:3; 1433:3;1434:3;1435:3; 1436:3;1437:3;1438:3; 1439:3;1440:3;1441:3; 1442:3;1443:3,5; 1444:1;1452:2; 1465:13;1483:14; 1503:16;1523:24; 1542:11;1564:24; 1566:21;1572:10; 1584:13 pages (2) 1419:25;1452:2 paid (5) 1497:25;1498:3,16, 23;1499:1 paired (2) 1574:17,21 panel (4) 1472:19;1480:9; 1523:19;1599:4 panning (1) 1515:13 paper (2) 1517:12;1574:12				

paperclip (1) 1513:7	1495:11	19;1487:23;1511:10;	physical (1) 1427:16	1487:13
paperclips (10) 1511:18,23,24; 1512:7,10,12,15,25; 1513:14,16	parts (3) 1486:23;1529:9; 1553:13	1525:7;1534:16; 1555:16,19,20;1556:2; 1573:24;1577:25; 1578:1;1581:19,19,19; 1588:14,18,25	physically (1) 1428:9	plaster (2) 1486:25;1581:17
papers (1) 1462:6	party (1) 1448:9	percentage (1) 1515:2	physicists (1) 1478:20	plastic (4) 1466:6;1531:5; 1565:11;1567:1
paperweight (4) 1513:3,4,6,7	past (4) 1486:20;1517:11; 1594:15;1596:14	percentage-wise (1) 1578:21	pick (2) 1501:15;1580:6	plastics (1) 1474:26
paperweights (2) 1512:24,25	patent (1) 1486:20	Perfect (2) 1472:16;1489:25	picked (1) 1460:6	plate (5) 1506:12;1540:11; 1549:11,14;1579:19
paperwork (1) 1492:18	pattern (7) 1489:25;1542:8; 1543:16;1544:18; 1584:9,11;1585:3	perfectly (1) 1572:8	picking (2) 1457:3;1469:26	plates (5) 1507:17;1515:4; 1520:9;1549:7,15
parallel (17) 1457:1;1528:18; 1540:9,9;1546:23; 1548:14,17;1549:2; 1551:18;1553:26; 1558:4;1561:14; 1572:4,8;1577:7,10; 1582:8	patterns (3) 1504:12;1528:20; 1581:4	perforated (1) 1489:24	picture (17) 1499:11;1505:3; 1506:22;1509:2; 1540:1,3,16;1541:6; 1544:8;1547:24; 1548:11;1549:20; 1565:1,3;1569:12; 1571:19;1576:22	platinum (1) 1490:25
part (23) 1452:3,4,5,6; 1472:10;1475:15; 1476:10;1482:10; 1487:10;1490:19; 1496:22;1502:10; 1503:3;1518:16; 1519:17;1540:16; 1550:19;1554:11,12; 1563:23;1568:8; 1581:24;1589:19	pay (1) 1498:10	perform (2) 1429:26;1523:15	pictured (1) 1531:1	play (3) 1446:12,14;1461:6
partial (1) 1532:4	payment (1) 1497:20	performed (2) 1462:4;1587:2	pictures (19) 1467:5;1507:19,19; 1508:15;1519:26; 1533:18;1535:6; 1544:16;1546:5,16; 1547:26;1552:7; 1571:17;1572:15; 1576:17;1578:23; 1580:25;1582:22; 1583:7	played (1) 1447:4
particle (27) 1466:17;1541:4,7; 1543:10,12;1544:4,8,9, 10;1548:3;1550:12,26; 1551:2;1567:5,10,12, 15,16,18,21;1576:19; 1577:3;1579:12,17; 1580:11,15,17	peer (2) 1481:10;1485:19	performing (2) 1494:17;1509:22	piece (3) 1447:11,20;1505:8	Please (20) 1430:12,15,15; 1446:13;1455:23; 1472:21;1474:4; 1496:13;1524:4; 1526:5;1546:11; 1560:17,19;1566:1; 1570:22;1593:4; 1594:15;1596:10,17; 1598:25
particulates (23) 1447:20;1467:20; 1496:19;1504:3; 1515:20;1516:25; 1518:8,9,18;1520:3; 1537:17;1538:1; 1547:26;1550:14,23; 1552:17;1556:9,10,13; 1567:17;1586:13; 1587:4;1588:4	peer- (2) 1470:7;1508:12	Perhaps (1) 1472:25	pieces (1) 1516:12	plenty (1) 1418:14
particular (13) 1456:24;1458:20,21; 1459:16,25;1460:1; 1482:7;1504:13; 1544:14;1548:3,8,17; 1578:2	peer-review (5) 1463:16;1468:7,10; 1480:25;1482:25	perlite (1) 1581:19	pink (1) 1573:18	PLM (11) 1574:9,13;1575:7; 1577:23,25,25;1578:3, 7,9,18,20
parties (4) 1428:26;1430:5; 1431:5;1485:10	peer-reviewed (8) 1462:21;1463:2; 1467:8;1469:9; 1470:15;1484:4; 1485:14;1523:8	permission (2) 1419:22;1431:8	place (5) 1424:9;1457:11; 1458:11;1472:5; 1486:23	plug (4) 1490:23,24;1522:23, 26
partners (1)	pencil (1) 1503:2	permitted (1) 1470:26	plaintiff (7) 1421:15;1457:21; 1459:13,16;1460:1; 1473:23;1479:15	plus (5) 1477:17;1498:7,13, 17;1513:25
	pending (1) 1420:13	person (6) 1428:14;1429:19; 1468:12;1484:23; 1525:8;1530:24	plaintiffs (12) 1447:22;1449:7; 1451:6;1461:5,25; 1462:2;1464:1; 1494:20;1495:3,16; 1498:19,21	point (23) 1417:11;1426:20,26; 1429:2;1455:17; 1458:16;1468:6; 1469:3;1472:2; 1477:13;1501:4,8; 1513:24;1525:6; 1528:16;1539:14; 1540:11,12;1556:17; 1577:13,14;1583:3; 1596:13
	People (16) 1428:21;1447:16,25; 1453:14;1458:11; 1470:24;1481:14; 1485:19;1488:8; 1489:13;1490:7; 1491:14;1515:13,21; 1516:14;1561:2	perspective (2) 1421:18;1429:6	plaintiffs' (5) 1426:12;1466:4; 1479:12,19;1530:7	pointed (1) 1451:7
	per (29) 1460:13;1462:12; 1467:22,26;1515:14; 1519:6;1527:12,15; 1535:1,23,25,25,25; 1536:2,12;1537:7,23; 1550:10;1575:16; 1577:20,20;1586:13, 13,16;1591:23;1592:5; 1593:11;1595:8; 1596:22	persuasive (1) 1471:8	plaintiff's (6) 1458:1;1469:21; 1529:16;1533:1; 1566:6;1571:1	pointer (2) 1502:8,9
	percent (26) 1448:9,24,25; 1486:11,11,18,18,19,	Pharmaceutical (1) 1517:14	plan (4) 1422:6;1423:4; 1455:1;1469:12	Pointing (1) 1552:3
		PhD (2) 1477:11,24	plant (1)	points (2) 1458:18;1483:8
		PhDs (1) 1498:11		Polarized (15) 1500:4;1508:16;
		philosophy (1) 1461:22		
		Phoenix (1) 1478:9		
		phonetic (1) 1490:22		
		photo (3) 1553:9;1571:21,25		
		photograph (5) 1534:3;1548:25; 1565:23;1566:4; 1583:10		

1514:6;1517:15; 1520:26;1574:6,17; 1575:3,7;1576:15,20, 24;1577:17;1580:20; 1581:1 polarizer (2) 1580:18,18 polars (1) 1580:17 polyethylene (1) 1516:12 polymer (4) 1475:12;1496:18,19; 1565:11 polymerize (1) 1490:25 polymers (1) 1474:26 Pooley (3) 1524:19,19,20 poor (3) 1473:3;1475:8; 1511:13 Port (3) 1487:19;1488:8; 1495:1 portion (4) 1446:4;1457:8; 1531:22;1535:14 portions (1) 1529:8 posed (1) 1466:25 posit (1) 1459:21 position (7) 1421:23;1426:12; 1450:25;1455:16; 1456:20;1472:25; 1563:10 positive (7) 1460:11;1469:25; 1534:16;1573:23; 1578:1,2;1579:24 positively (2) 1504:8,15 positives (2) 1578:17,21 possibilities (1) 1592:12 possible (6) 1451:23;1454:24; 1515:6;1525:21; 1526:9;1534:5 possibly (1) 1453:2 posterity (1) 1466:24 potassium (5) 1538:19,21,25; 1554:15,16 potential (4) 1460:15;1493:17;	1517:3;1578:16 potentially (4) 1417:20;1449:6; 1460:25;1551:5 pound (1) 1504:24 pour (2) 1497:7;1515:18 poured (1) 1497:1 pouring (1) 1515:17 Powder (94) 1424:10;1459:15,19, 19;1464:12,16;1465:8; 1466:7,16;1467:18; 1468:4,18;1469:10; 1496:11,25;1497:4; 1509:12,15,21; 1514:19;1517:7; 1521:14;1522:21; 1528:5;1530:6; 1531:10;1532:2,7,7; 1534:10,24;1536:16, 24;1537:16;1538:8; 1539:8,10;1540:5,15; 1544:6;1545:5;1546:4, 19;1547:7;1548:13; 1550:12;1551:16,17; 1552:18,24;1555:7; 1556:5,23;1557:9; 1558:26;1559:15,21; 1560:4,12,22;1561:6; 1562:4;1564:2;1566:9; 1567:6,20;1570:24; 1571:14;1572:2; 1573:2,12,21;1575:11; 1576:11;1579:13; 1581:2,6;1582:3,17,23; 1583:1,8,24;1584:2; 1585:14,22,25;1588:9; 1593:13,23,26; 1594:20;1595:4,21 powders (1) 1456:11 Power (1) 1470:13 powerful (1) 1504:7 precise (3) 1446:18;1494:6; 1543:22 precisely (1) 1489:22 pre-concentration (1) 1524:21 prediction (1) 1459:1 pre-existing (1) 1429:7 prejudice (1) 1430:5 prejudicial (1)	1461:9 preliminary (2) 1533:9,12 preparation (13) 1513:25;1514:3,13, 16,18,18;1526:19; 1560:25;1569:25; 1574:15,16,21;1576:20 prepare (4) 1463:17;1494:5; 1512:22;1514:13 prepared (2) 1420:23;1422:13 preparing (2) 1463:15;1569:19 presence (9) 1479:22;1494:12; 1513:23;1514:2; 1521:14;1522:14,22; 1528:5;1595:22 present (12) 1421:23;1455:24; 1511:15;1514:26; 1522:17;1527:23; 1532:8;1537:3,6,6; 1573:25;1591:6 presentation (3) 1449:15;1450:23; 1451:9 presented (2) 1447:12;1530:23 presents (1) 1447:21 preserved (4) 1455:20;1466:23; 1570:7;1573:3 press (2) 1451:1;1502:10 pressure (1) 1565:8 pretty (4) 1478:24;1488:10; 1495:19;1584:4 prevent (1) 1468:6 prevented (1) 1429:19 previous (4) 1429:4;1505:13; 1530:2;1579:14 price (1) 1499:9 pried (4) 1565:10,11,19; 1567:1 primarily (6) 1530:7;1553:4; 1575:24;1576:7,8; 1586:3 primary (1) 1597:24 prior (3) 1428:25;1447:1;	1457:2 priority (1) 1473:21 privately (1) 1431:10 probable (3) 1592:21;1593:3; 1594:5 probably (10) 1418:11;1448:17; 1451:3;1490:12; 1491:11;1494:13; 1499:19,22;1592:6,9 problem (10) 1428:6;1430:6; 1457:6,19;1473:8; 1481:9;1482:4,4; 1525:14,16 problems (1) 1483:5 procedural (1) 1418:17 procedures (1) 1494:9 proceed (1) 1422:16 PROCEEDINGS (39) 1417:1;1418:1; 1419:1;1420:1;1421:1; 1422:1;1423:1;1424:1, 19;1425:1;1426:1; 1427:1;1428:1;1429:1; 1430:1,7;1431:1,15; 1432:1;1433:1;1434:1; 1435:1;1436:1;1437:1; 1438:1;1439:1;1440:1; 1441:1;1442:1;1443:1; 1466:1;1467:1;1468:1; 1469:1;1470:1;1471:1; 1472:1;1473:1;1599:8 process (16) 1426:3;1496:22; 1552:5;1561:8; 1568:11,12,16,18,24; 1569:2,4,5,8,10,11; 1581:24 processes (1) 1457:11 processing (1) 1496:6 produced (3) 1521:25;1533:8; 1572:11 product (28) 1462:7;1465:12; 1468:14;1469:23; 1470:15;1486:13; 1490:7;1494:21,21; 1496:10,11;1497:1,2,2, 6;1507:24;1539:3,17; 1553:7;1554:8;1555:7; 1571:5,20;1581:7,23; 1582:2,6;1587:5	products (69) 1459:3;1461:18; 1462:5;1463:25; 1464:1,4,5,5,11; 1468:11;1480:23; 1486:4,22;1489:13; 1493:18;1494:10,18; 1495:5,6,17;1529:19, 23;1530:5,6,9,13,21; 1531:2,11,13;1532:2,7, 7,10;1534:10,11,24; 1535:19;1536:16,24; 1537:16;1548:13; 1556:23;1558:10; 1559:2,15,21;1560:4, 12,22;1561:6;1564:18; 1565:4;1567:6,22; 1570:5,24;1571:4; 1573:2,6,8,22;1574:20; 1575:2;1576:5;1581:9, 12,13;1582:17 professional (2) 1529:6;1560:14 professionals (1) 1478:16 professor (1) 1477:16 program (9) 1424:2,8;1446:22, 23;1480:26;1489:19; 1491:10,20;1493:19 project (3) 1490:2;1491:3; 1500:7 projects (1) 1477:17 promise (1) 1429:11 promptly (1) 1523:17 proper (2) 1552:9,10 properly (11) 1429:16;1524:3; 1545:9;1556:6,24; 1557:10,25;1560:22; 1561:5;1564:4; 1570:21 property (1) 1499:3 propose (3) 1417:8;1422:18; 1430:25 proposed (1) 1428:15 protected (1) 1468:13 protection (3) 1571:8,15;1573:17 protested (1) 1428:15 protocol (15) 1463:24;1485:5,8;
---	---	--	---	--

February 25, 2019

1528:12,12;1529:2,3,4, 7,9;1535:15;1537:18; 1580:8;1589:5;1596:4 protocols (4) 1528:9;1556:25; 1557:16;1562:10 protruding (1) 1548:19 prove (2) 1501:8;1583:16 proved (1) 1583:16 provide (1) 1450:17 provided (3) 1461:25;1464:1,3 provides (1) 1429:24 providing (2) 1470:16;1481:24 pry (1) 1466:9 public (1) 1488:17 publication (2) 1517:20;1586:21 published (15) 1462:19,20;1463:2; 1467:13;1468:9; 1483:2;1484:4; 1517:13;1520:22; 1521:15;1523:8; 1540:20;1574:13,16; 1595:26 publishing (2) 1482:24;1508:12 pull (4) 1503:15;1505:18; 1506:12;1522:26 pulled (2) 1459:18;1565:15 pulling (1) 1490:23 purchase (1) 1530:23 purchased (3) 1458:2,4;1530:22 pure (1) 1571:14 purest (2) 1571:8;1573:17 purge (1) 1429:4 purple (1) 1580:12 purposes (1) 1529:16 pursuant (1) 1463:23 push (1) 1448:8 pushing (1) 1503:13	put (25) 1426:18,24;1449:11, 17,20;1475:4;1481:8; 1486:6,14;1490:21,24; 1492:16;1497:3; 1504:25;1509:7; 1510:11,24;1513:3; 1517:22;1518:2; 1551:24;1568:14; 1570:8;1572:15; 1576:25 putting (4) 1476:21;1480:21; 1485:5;1580:6 Q QC (1) 1491:25 qualifications (4) 1421:24;1471:10,11; 1481:24 qualified (2) 1470:21,25 Quality (2) 1492:7,16 quantifiable (2) 1589:24;1591:26 quantifies (1) 1462:9 quarter (1) 1593:11 questin (1) 1526:5 quickly (3) 1422:23;1430:9; 1456:6 Quite (4) 1474:24;1495:4,9; 1549:25 R radio (1) 1598:22 raise (3) 1455:3;1467:23; 1473:25 raised (2) 1462:15;1467:14 Raleigh (4) 1478:9;1489:21; 1490:22;1504:4 ran (2) 1446:19;1507:12 random (1) 1535:14 range (7) 1522:7;1535:18,21; 1575:15;1577:18; 1578:8;1586:17 Ratcliffe (1) 1459:13	rate (2) 1497:21,23 rather (2) 1420:4;1423:18 ratio (32) 1457:1;1528:17; 1537:14,15,18,21,22, 24;1540:8,13;1542:1, 5;1546:23;1547:3,20; 1548:16;1553:15; 1554:4;1558:5,20,23; 1561:15;1564:7; 1577:14;1578:21; 1583:2,3;1587:3,20; 1588:10,15;1589:3 ratios (6) 1537:25;1575:16; 1578:12;1586:20; 1588:19,26 raw (5) 1465:2;1558:25; 1559:8;1561:18; 1563:16 Ray (6) 1456:1,2;1463:9; 1469:14,17;1470:14 RCA (2) 1506:18,19 read (11) 1419:3,16,18; 1424:19;1452:3; 1521:14;1539:17; 1593:7;1596:8,9,12 ready (5) 1431:14;1446:12; 1449:21;1492:24; 1570:13 realize (1) 1485:8 really (19) 1450:4;1451:14; 1452:23;1480:11; 1481:26;1496:10; 1500:10;1502:12; 1506:13;1513:19; 1514:10,23;1515:12; 1519:14;1522:13; 1529:14;1568:10; 1578:9;1598:20 reason (12) 1418:21;1427:5; 1429:26;1457:16; 1458:15;1469:26; 1526:12,15;1555:9,14; 1595:25;1597:24 reasonable (2) 1522:7,16 reasons (5) 1422:8;1450:5; 1461:13;1549:16; 1555:9 recall (3) 1524:10;1537:18;	1569:9 Received (6) 1477:6,9,10; 1479:20;1489:6; 1571:12 receiving (1) 1521:24 recent (1) 1479:13 recently (1) 1475:13 recess (2) 1523:23;1570:18 recipe (1) 1480:12 recipes (1) 1484:14 reclassified (1) 1496:8 recollection (1) 1534:20 recommendations (1) 1481:11 record (20) 1426:16;1455:5,11, 12,19,20,21;1498:19; 1501:6;1511:2; 1520:11;1529:13; 1546:10,13;1547:13; 1557:15;1566:20; 1577:18;1579:8; 1580:10 recorded (3) 1450:24;1459:20; 1460:7 records (2) 1422:4;1526:2 red (6) 1502:10,13;1587:23, 24;1588:3,4 redefined (1) 1538:23 redirect (1) 1420:26 reduce (1) 1496:23 reduces (1) 1579:2 reducing (1) 1580:19 redundancy (2) 1490:18,20 referee (2) 1490:7,8 reference (5) 1447:9;1544:26; 1545:8;1553:18; 1563:10 references (2) 1545:11,13 referring (2) 1459:11;1546:12 refill (2)	1458:12,13 reflect (1) 1501:6 refraction (1) 1582:8 refractive (2) 1577:3,8 refracted (2) 1580:3,5 refused (1) 1429:16 regard (7) 1421:18;1424:24; 1425:17;1428:21; 1451:12;1455:25; 1536:25 regarding (1) 1463:3 regardless (3) 1417:18,18;1463:7 regular (1) 1430:14 regulated (22) 1528:22,23;1529:13; 1535:23;1536:8; 1538:10;1539:24; 1543:25;1544:3; 1546:22,25;1548:15; 1553:20;1561:16; 1562:7,23;1564:7; 1572:6,25;1573:24,24; 1584:3 regulations (7) 1456:21,21,24; 1457:5,8,9;1559:25 rehearsed (1) 1451:3 reject (2) 1471:4,5 related (4) 1485:22;1486:1; 1488:25;1598:23 relating (1) 1481:18 relative (1) 1473:16 relatively (1) 1527:2 relative's (1) 1473:18 release (2) 1461:17;1497:14 released (2) 1508:9;1569:22 releasing (1) 1496:21 relevant (1) 1519:21 reliable (7) 1456:9,9,18; 1457:17,18;1458:16,17 relied (2) 1452:24,25
---	--	--	--	---

February 25, 2019

relies (1) 1462:18	requirement (3) 1545:26;1558:16,17	1427:12;1494:23; 1503:10	25;1583:6;1586:22; 1587:9,12;1588:17,19, 23;1589:7;1595:14; 1596:9,13,15	1559:24;1561:11
relying (1) 1450:21	requirements (1) 1558:26	review (4) 1485:20;1531:16,25; 1547:5	right-hand (3) 1549:12,24,26	ruling (4) 1421:10,11;1455:13, 22
remaining (1) 1417:4	requires (2) 1456:16;1470:23	reviewed (11) 1456:3;1462:5; 1470:8;1508:13; 1557:6;1585:11,12,16, 18,20,23	rights (2) 1417:15,20	rulings (6) 1420:10,13;1421:15; 1422:24;1423:18; 1455:11
remediate (1) 1482:12	research (7) 1418:14;1477:23; 1481:6,10,11,25; 1508:11	reviewing (2) 1563:15;1583:13	rigorous (1) 1485:19	run (6) 1477:19;1491:10; 1506:2;1522:26; 1548:9;1569:8
remedies (1) 1455:17	resolution (1) 1489:4	reviews (1) 1481:11	rise (7) 1430:10;1472:18; 1523:18;1524:1; 1570:16,19;1599:3	runs (1) 1501:23
remember (4) 1475:23;1490:12; 1512:24;1541:24	resolve (7) 1418:6,9,12;1421:4; 1422:19;1500:17; 1501:12	Reynolds (5) 1521:21;1522:4,11, 19;1524:8	RIST (1) 1588:7	S
remembered (2) 1450:6;1534:18	respect (2) 1469:10;1536:14	ribbon (2) 1480:9;1573:18	RJ (2) 1564:17;1594:19	
remove (11) 1425:5,7;1430:2; 1454:4,6,21,23;1466:6, 7;1517:4;1523:2	respirable (1) 1550:25	richterite (21) 1496:8;1533:22; 1538:13,13,14,22,25; 1539:1;1553:24; 1554:7,13,22,23; 1555:4,5,14,15,17,22; 1560:8;1576:7	RMAss (1) 1588:7	S/S (1) 1539:11
removed (1) 1455:14	respirator (1) 1461:10	richterites (1) 1553:24	Road (1) 1429:22	sadly (1) 1471:26
removing (3) 1515:5;1517:19; 1598:13	respond (2) 1469:15;1470:5	rid (1) 1519:24	Robert (1) 1524:16	SAED (3) 1464:9;1544:10; 1547:25
render (1) 1451:18	Response (1) 1491:16	right (101) 1420:6;1421:8; 1422:13;1447:23; 1450:1,19;1452:21; 1453:5;1464:21; 1465:4;1466:12; 1473:25;1474:22; 1476:16;1479:11; 1482:3;1488:2; 1490:25;1491:2; 1493:11,14;1495:21; 1498:10;1499:8; 1501:10,22;1502:23; 1504:17;1505:7,16,20; 1506:11;1508:3; 1511:6,19;1513:8,14; 1514:17;1517:6,21; 1518:6;1519:10; 1521:19;1530:18; 1532:13;1533:3; 1535:21;1536:2,7; 1538:3;1539:6; 1540:16;1541:3,10,12, 17,20;1543:12,18; 1544:4,24;1546:3,23, 24;1547:9,23;1548:10; 1549:8,9,14;1552:23; 1554:6;1556:4,20; 1557:8;1560:2,18; 1561:18;1563:14; 1564:9;1565:1,22; 1567:21;1569:12; 1571:4;1574:18,19,22,	robing (1) 1430:26	Safety (2) 1556:15;1569:18
rendering (2) 1429:19;1453:13	responses (1) 1426:15	richterites (1) 1553:24	rock (2) 1515:16,17	sake (1) 1455:12
repeat (2) 1593:4;1597:11	responsive (1) 1596:8	rid (1) 1519:24	rocks (1) 1572:7	salt (1) 1565:7
repetitious (1) 1544:23	rest (7) 1492:19;1528:13; 1541:22;1549:6; 1550:7;1571:14; 1575:23	right (101) 1420:6;1421:8; 1422:13;1447:23; 1450:1,19;1452:21; 1453:5;1464:21; 1465:4;1466:12; 1473:25;1474:22; 1476:16;1479:11; 1482:3;1488:2; 1490:25;1491:2; 1493:11,14;1495:21; 1498:10;1499:8; 1501:10,22;1502:23; 1504:17;1505:7,16,20; 1506:11;1508:3; 1511:6,19;1513:8,14; 1514:17;1517:6,21; 1518:6;1519:10; 1521:19;1530:18; 1532:13;1533:3; 1535:21;1536:2,7; 1538:3;1539:6; 1540:16;1541:3,10,12, 17,20;1543:12,18; 1544:4,24;1546:3,23, 24;1547:9,23;1548:10; 1549:8,9,14;1552:23; 1554:6;1556:4,20; 1557:8;1560:2,18; 1561:18;1563:14; 1564:9;1565:1,22; 1567:21;1569:12; 1571:4;1574:18,19,22,	Roller (2) 1524:16,17	same (73) 1425:22;1427:3; 1453:19;1457:9; 1459:8,8;1462:25; 1467:6;1487:3,4,20; 1492:3;1496:11; 1499:6;1503:11; 1509:16,17,22,25; 1511:15;1516:23; 1520:6,15,17;1527:2; 1528:12;1529:3,4,9; 1533:24;1538:24; 1539:18;1540:22,24; 1541:1;1543:10,23; 1544:23;1545:16; 1550:6,6;1553:15; 1560:2;1561:11,17; 1564:6;1567:14,16,18; 1568:18,22,24; 1571:12;1574:23; 1575:25;1576:1,14; 1579:1,1,6,12;1580:11, 15,17;1582:2,9,15,18; 1584:4;1585:4;1586:6; 1591:17;1592:26
replace (2) 1430:2;1476:22	restrictive (3) 1558:20,21,23	richterite (21) 1496:8;1533:22; 1538:13,13,14,22,25; 1539:1;1553:24; 1554:7,13,22,23; 1555:4,5,14,15,17,22; 1560:8;1576:7	rollerball (1) 1506:3	sample (64) 1459:2;1460:3,4,6, 25;1487:22;1488:6,12; 1494:1,5;1500:8; 1503:3,5;1504:23,25; 1505:23,25;1506:2; 1508:23;1514:13,15; 1518:20;1519:3;
replacing (1) 1428:15	result (3) 1460:11;1480:13; 1512:17	richterites (1) 1553:24	room (12) 1427:15;1430:26; 1459:20,23,25;1460:1, 25;1461:10;1495:12; 1506:24;1507:2; 1570:18	
report (27) 1459:11,12;1462:2, 3,9;1533:2,8,13,17,25; 1534:4,10;1566:21; 1571:10;1572:10; 1573:1,8;1587:25; 1588:2;1590:5,9,15,16, 17,18,20;1598:25	results (16) 1459:4,6;1460:12; 1466:26;1467:2; 1469:9;1470:8; 1480:17,19;1534:9; 1573:20;1575:17; 1586:15;1589:9,9,10	richterites (1) 1553:24	rooms (1) 1459:24	
reported (5) 1562:7,23;1586:12, 13;1591:15	resume (1) 1428:4	richterites (1) 1553:24	rotate (1) 1585:3	
reporter (1) 1495:12	resuspend (1) 1518:15	richterites (1) 1553:24	roughly (1) 1531:17	
reporting (2) 1590:12,22	retained (1) 1530:9	richterites (1) 1553:24	round (2) 1505:21;1516:12	
reports (4) 1457:2;1462:5; 1491:20;1576:3	retardation (1) 1579:19	richterites (1) 1553:24	row (4) 1543:18,20,21,21	
representative (1) 1544:16	Reuters (1) 1447:12	richterites (1) 1553:24	rows (1) 1543:18	
represented (2) 1533:25;1559:11	reversal (1) 1428:19	richterites (1) 1553:24	RPI (1) 1518:10	
representing (1) 1530:21	reverse (3) 1486:8;1487:12; 1595:25	richterites (1) 1553:24	rubber (2) 1522:23,26	
required (5) 1417:10;1454:16; 1459:1;1526:5;1589:4	reversed (3)	richterites (1) 1553:24	rule (5) 1453:16,18;1583:5; 1590:6;1591:15	
		richterites (1) 1553:24	rules (10) 1422:25;1491:17,22; 1494:8;1523:16; 1528:6;1538:9;1540:6;	

February 25, 2019

1520:18;1525:24; 1535:16;1539:3,7,21; 1540:4;1544:14,19,25; 1545:14;1548:3,4,5,6; 1549:20;1551:14; 1555:6,21;1566:18; 1567:14,14;1568:5,7; 1570:6;1571:20; 1575:21,22,23; 1578:18;1579:12; 1584:10;1585:18,24; 1586:25;1587:10; 1588:8;1591:2,2; 1593:15,16 sampled (1) 1539:3 samples (56) 1457:20;1458:20; 1460:13;1462:4,12; 1463:15,17;1464:13; 1466:3,3,18,18,22,25, 26;1467:2,11;1480:23; 1486:8;1487:23; 1489:3,17;1491:16,22; 1494:11;1497:16; 1504:7;1530:16; 1536:15;1537:20,22; 1538:7,8;1545:8; 1565:12;1566:12,19, 24;1569:4,6,19,23; 1570:1;1571:11,12,13; 1573:23,24;1574:5; 1575:5;1578:6,15; 1583:25;1586:5; 1589:16;1594:19 sample's (1) 1567:14 sampling (3) 1487:16;1488:5; 1585:21 San (2) 1478:10;1494:24 Sanchez (2) 1594:19;1595:2 Sanchez's (3) 1594:22;1595:23; 1597:19 sank (1) 1519:17 save (2) 1423:17;1424:18 saw (8) 1447:2;1449:6; 1475:13;1521:6; 1523:5;1546:3; 1553:17;1578:10 saying (11) 1421:5;1447:22; 1449:10,19;1452:17; 1453:4;1463:5;1513:6; 1537:7;1554:20; 1589:11 scale (19)	1476:13;1510:16,26, 26;1511:2,3,5,17,22, 23;1512:10,11,14; 1513:2,8,11,17,18; 1525:23 scales (1) 1510:4 scanning (9) 1477:22;1478:22; 1489:4;1505:25; 1508:18,20,23;1521:2; 1571:19 scans (1) 1508:24 scatter (1) 1504:13 scattering (1) 1541:14 school (9) 1475:16;1477:8,16, 18;1488:17;1495:1,2; 1516:7,20 science (14) 1461:23;1470:23; 1474:17,20,22;1477:3, 6,8,9,9,11,18;1478:15; 1516:19 scientific (14) 1458:24;1466:25; 1474:23;1477:19; 1489:1,20;1490:15; 1515:9,11;1526:12,15; 1555:10,14;1558:12 scientifically (5) 1456:9,17;1457:17, 18;1517:9 scientist (6) 1475:26;1476:15,18, 22;1483:11;1526:11 scientists (13) 1456:19;1475:18; 1476:4,5,9,25;1477:20; 1478:18;1480:8; 1481:3;1485:9,16; 1506:17 Scotts (1) 1495:24 screen (18) 1462:20;1502:14; 1503:15;1505:17; 1506:8,12,14;1509:3; 1524:12,14;1526:17; 1566:3;1567:12; 1568:2;1570:3; 1572:14;1578:25; 1580:14 screens (3) 1505:7;1506:3,4 screwdriver (2) 1466:9;1565:15 scrutinized (1) 1485:14 sealed (4)	1431:15;1457:25; 1458:2,3 seam (1) 1475:24 searched (1) 1517:12 searches (1) 1523:15 seat (2) 1430:11,14 seated (8) 1429:25;1430:16; 1472:22;1474:4; 1524:3,4;1570:21,22 second (13) 1419:10,25;1426:6, 16;1429:22;1450:10, 20;1453:2,6;1482:10; 1506:20;1524:20; 1584:10 seconds (1) 1450:13 Section (2) 1520:25;1589:22 seeing (2) 1544:18;1586:12 seek (1) 1463:4 seemed (2) 1450:15;1451:2 seems (2) 1450:8;1579:15 sees (1) 1458:23 segment (8) 1446:14,15,19,20,21, 24;1451:24;1452:25 segments (1) 1447:22 select (1) 1550:7 selected (4) 1453:24;1547:21; 1549:4;1584:7 selling (2) 1539:15,18 SEM (3) 1571:19,21,25 semiconductor (1) 1476:8 semiconductors (1) 1478:12 send (4) 1485:17;1487:11; 1497:24;1569:7 sense (2) 1504:21;1528:25 sensitive (28) 1511:11;1512:8,14, 22;1513:9,10,18,20; 1514:10,14,14;1515:7; 1517:5,16;1519:24; 1525:9,13,19,21,23;	1526:1,13,21;1527:5; 1578:5,8,14;1596:24 sensitivities (1) 1520:5 sensitivity (8) 1510:6,18;1511:8, 13,20;1513:5;1514:12; 1598:8 sent (7) 1428:4;1530:7; 1566:5,6,11,12; 1575:18 separate (5) 1515:10;1517:2,3; 1526:23;1527:11 separated (1) 1517:17 separates (1) 1516:26 separating (3) 1518:18;1522:25; 1527:17 separation (29) 1463:17,20;1514:23; 1515:8;1516:26; 1517:11,15,22; 1520:13,20,26;1521:8; 1522:13;1525:2,4; 1526:19;1540:19,25; 1549:17;1574:10,11; 1575:8;1595:16,26; 1596:26;1597:2,5,15, 20 September (2) 1479:10;1585:21 series (17) 1514:26;1515:2; 1527:1;1533:23; 1538:15;1539:2; 1553:3,4,12,14;1560:6, 7,7,9;1571:23;1575:14, 23 serious (1) 1540:23 seriously (1) 1447:19 serpentine (1) 1559:10 service (2) 1490:16;1587:4 Services (12) 1478:5,17;1498:1, 16;1499:10;1505:4; 1533:6,9;1544:5; 1575:12;1576:19; 1595:15 session (2) 1419:25;1449:8 set (8) 1492:2;1494:2; 1497:15;1510:23; 1537:22;1569:4,23; 1595:5	sets (1) 1537:20 settled (1) 1480:22 seven (4) 1527:14;1573:23; 1575:10;1577:19 several (3) 1426:3;1449:8; 1598:10 shaft (2) 1487:23;1488:11 shafts (1) 1488:9 shake (1) 1565:7 shaker (1) 1565:7 shakes (1) 1459:19 shape (1) 1456:25 sheet (1) 1533:19 sheets (1) 1533:24 shelf (9) 1458:2;1466:17; 1529:25;1530:10; 1567:7,15,19,21; 1588:8 shield (1) 1487:24 shields (2) 1476:3,6 ship (1) 1510:4 shorter (1) 1556:11 shot (2) 1489:23;1502:24 show (26) 1423:26;1446:10,21, 24;1450:7,24;1454:22; 1461:10;1464:14; 1466:9,13;1469:13; 1479:11;1502:11,16; 1521:5;1522:19; 1524:12;1529:15; 1565:19;1570:25; 1571:20;1577:11; 1578:11;1581:5; 1589:19 showed (4) 1521:26;1547:7; 1564:21;1588:21 Shower (46) 1531:11,11;1534:10, 11;1539:11,11,12,12, 12,13,16,16;1544:6,6; 1546:20,20;1553:7,7,7, 7,10,10,23,23,25,25; 1554:8,8;1556:5,5,23,
--	--	--	---	---

23;1557:9,10;1559:2,2, 15,15,21,21;1562:4,4; 1564:3,3;1567:6,6 showing (7) 1464:6;1502:14; 1543:19;1544:9,10; 1553:10;1588:9 shown (7) 1524:13;1566:2; 1568:1;1570:2; 1572:13;1578:24; 1580:13 shows (9) 1451:3;1461:9; 1467:8;1510:26; 1539:4;1552:23; 1553:14;1576:22; 1580:21 Show's (1) 1451:6 shuffled (1) 1472:24 Shuttle (2) 1476:3,7 Si (1) 1541:19 sic (1) 1461:20 side (18) 1417:15,20;1418:20; 1475:24;1495:19; 1504:9;1505:20; 1546:16,22,24; 1548:18;1549:12,24; 1550:2,3;1552:2; 1565:13;1566:16 sides (24) 1417:15;1425:4; 1426:25;1447:21; 1451:22;1452:12,16, 23;1454:3,19;1455:21; 1457:1;1503:10; 1528:18;1540:9,9; 1546:23;1548:14,17; 1551:18;1553:26; 1558:4;1561:14; 1582:8 signal (1) 1490:1 signature (1) 1581:21 significant (4) 1495:6;1498:1; 1526:19;1571:25 signs (1) 1564:21 silica (4) 1543:3;1547:3,8,18 silicon (4) 1541:15,19;1542:1,7 silver (1) 1507:18 similar (13)	1456:21;1467:3,5,5; 1469:8,9;1470:6; 1488:14;1489:11; 1553:19,21;1577:3; 1586:12 similarly (1) 1417:16 simple (2) 1512:26;1595:25 simply (4) 1417:13,22;1430:6; 1474:24 simulating (1) 1461:11 simulation (3) 1459:15;1468:9,12 sincere (1) 1453:7 single (2) 1423:9;1591:22 sit (3) 1418:10;1430:14; 1506:4 site (3) 1482:2;1496:5; 1554:20 sits (1) 1507:2 sitting (4) 1492:22,24;1495:19; 1541:14 situation (4) 1428:10;1453:15; 1460:2;1515:21 six (4) 1468:22;1481:5,13; 1485:13 size (13) 1466:17;1467:10; 1503:2;1504:21,25; 1516:23;1528:21; 1567:6,15,16,18,22; 1578:9 sized (2) 1489:25;1578:12 sizes (4) 1567:10;1587:24,26; 1588:4 skill (1) 1470:23 sleeve (1) 1511:4 slide (8) 1458:23;1500:1,2; 1546:12;1554:6; 1557:18;1572:12; 1594:13 slides (1) 1546:10 slightly (1) 1487:15 slope (1) 1547:4	small (7) 1468:2,2;1489:18; 1500:13;1502:4; 1511:21;1515:2 smaller (6) 1476:8;1504:3; 1505:26;1508:16; 1513:10;1578:13 smallest (1) 1567:12 smart (3) 1452:20;1453:4,23 smell (2) 1482:8,9 smoke (3) 1507:16;1508:4,9 Society (2) 1484:9,10 soda (1) 1475:23 sodic (2) 1538:22;1554:18 sodium (1) 1538:21 sold (3) 1506:18;1507:14; 1539:17 solid (13) 1527:1;1533:22; 1538:15,17;1539:2; 1553:2,3,13;1560:5,6; 1571:23;1575:13,22 solution (12) 1527:1;1533:23; 1538:15,18;1539:2; 1553:2,4,14;1560:6,7; 1575:13,23 solutions (1) 1571:23 solve (1) 1483:5 solvents (2) 1482:7,7 somebody (3) 1481:26;1511:26; 1565:11 somehow (2) 1476:13;1515:4 someone (4) 1461:9,11;1524:24; 1525:12 sometimes (4) 1468:22,23;1487:12; 1579:6 somewhat (1) 1487:24 somewhere (1) 1482:9 sophisticated (1) 1458:25 sorry (14) 1446:17;1475:6; 1476:5;1500:20;	1526:6;1547:11; 1552:14;1557:14; 1562:14;1568:20,22; 1585:6;1596:18; 1597:6 sort (8) 1457:11;1484:7; 1503:8;1533:15; 1541:24;1543:3; 1548:19;1589:3 sound (1) 1487:24 sounds (1) 1498:9 source (2) 1572:23;1573:11 sources (3) 1457:21;1458:5,15 Space (3) 1476:3,7;1489:19 span (2) 1531:4,7 spanning (1) 1529:20 speak (4) 1419:16;1431:9; 1475:5;1568:20 speaking (5) 1417:14,17,23; 1427:8;1451:2 special (3) 1461:10;1470:23,24 specialize (3) 1474:17;1478:12,20 specialized (3) 1490:18;1498:10,12 specific (3) 1447:11;1560:17,18 specifically (4) 1484:25;1508:7; 1520:24,25 specification (3) 1465:2;1558:25; 1561:19 specifications (4) 1559:9;1563:16,18; 1567:13 specificity (1) 1451:5 specify (1) 1456:24 specs (1) 1477:23 spectra (1) 1553:14 spend (3) 1475:15;1516:19; 1590:26 spent (2) 1483:11;1525:12 sperm (1) 1489:8 spewing (1)	1501:25 spill (1) 1565:9 spoke (1) 1451:23 sprayed (1) 1487:25 spread (4) 1497:1;1503:12; 1520:10;1540:23 spreaders (1) 1497:1 spun (1) 1518:10 square (8) 1425:3;1452:12,15; 1454:3,19;1478:14; 1498:4,6 squared (2) 1535:11,12 squeeze (1) 1502:7 squeezes (1) 1459:19 squeezing (1) 1502:25 stacking (1) 1520:7 staff (1) 1498:14 stage (1) 1481:12 stain (1) 1576:25 staining (3) 1576:24,25;1577:2 stand (3) 1502:16,21;1510:14 standalone (1) 1475:14 standard (33) 1451:14,15;1462:22; 1464:17;1465:9; 1467:12,18;1484:13, 14,17,21,22;1485:3; 1493:15,23;1509:26; 1512:19;1520:23; 1521:4;1528:8; 1529:11,11;1535:15; 1546:7,15;1547:16; 1558:21;1561:10; 1574:7,25;1575:1; 1596:4;1597:2 standardize (1) 1480:14 standardized (2) 1480:17,18 standards (27) 1462:19;1464:8,11, 13,19;1465:12; 1484:11,15,19; 1491:11,25;1492:6; 1493:25;1509:17;
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1528:5;1545:17,20,23, 25,26;1546:15; 1547:17;1560:16,20, 23;1563:26;1564:5 standing (5) 1417:4,4,5;1451:2; 1487:17 stands (2) 1478:5;1539:7 starch (2) 1486:12,19 start (11) 1480:12;1485:23; 1496:21;1501:25; 1502:5,25;1514:17; 1523:17;1539:15; 1584:7;1593:12 started (11) 1427:16;1478:3,4; 1479:3,7,9;1514:21; 1515:13;1517:6; 1521:13,24 starting (7) 1458:16;1476:14; 1477:5,15;1496:3; 1549:26;1573:13 state (21) 1426:12,24;1428:24, 25;1462:8,25;1470:26; 1471:16;1474:6; 1488:14,15,16; 1494:19,23,24,25; 1499:1,9;1507:9; 1509:23;1546:11 statement (4) 1425:17;1452:22; 1522:9,10 statements (1) 1447:1 states (8) 1418:19,24;1429:6; 1488:17;1494:19; 1499:4;1507:6; 1528:13 statistical (3) 1458:24;1459:1,7 statutes (2) 1457:8,9 stay (1) 1527:20 stayed (1) 1477:10 stays (1) 1585:4 steel (1) 1475:24 step (7) 1431:11;1502:15; 1510:22;1551:26; 1552:2,4;1559:7 stepped (1) 1502:20 steps (3)	1451:17;1466:4; 1564:20 stick (3) 1498:19;1506:2; 1555:11 sticker (1) 1569:14 sticking (1) 1551:22 still (16) 1455:7;1482:22; 1497:5;1502:3; 1507:10,17;1512:3; 1533:21;1561:2,9,9; 1564:11,13;1588:5,5; 1591:6 stipulations (1) 1422:4 stop (1) 1572:18 stopped (2) 1487:25;1488:12 store (1) 1567:21 story (2) 1447:12,21 straight (1) 1580:20 strange (2) 1458:11;1460:5 strength (4) 1525:14;1563:2,2,4 strengths (2) 1475:20;1477:25 stress (1) 1469:18 stretched (1) 1501:1 strict (1) 1494:8 strike (7) 1451:13,20;1453:20; 1531:23;1559:8; 1596:5,14 striking (2) 1448:22;1451:24 stronger (1) 1426:5 structure (17) 1464:9;1504:11; 1543:8,15,19;1544:10; 1548:7,20;1550:15,20; 1551:14;1554:7,7; 1572:3;1580:22,23; 1588:6 structures (2) 1548:23;1552:22 students (2) 1516:7,8 studied (1) 1461:23 studies (5) 1462:4,5;1468:20,	21;1523:10 study (13) 1461:2;1467:16; 1468:3,15;1469:8,19; 1470:2,3,7,9;1474:24; 1574:20;1588:21 stuff (5) 1476:26;1477:19,26; 1511:21;1555:20 style (2) 1471:16,17 sub (1) 1560:7 subber (1) 1490:22 subcommittee (1) 1485:9 subject (2) 1431:6;1585:10 submission (1) 1429:25 suburbs (1) 1474:19 succeed (1) 1448:22 successful (1) 1493:12 sudo (1) 1585:2 sued (1) 1447:16 sufficient (1) 1420:19 suggests (1) 1418:3 suing (2) 1447:25;1486:21 suitable (1) 1418:21 sum (1) 1598:7 summary (1) 1461:18 sunglasses (1) 1580:21 super (2) 1514:11;1554:20 Superfund (1) 1496:5 supervising (1) 1423:23 supplement (1) 1489:13 support (1) 1498:13 suppose (1) 1543:24 supposed (2) 1464:14;1580:1 sure (23) 1418:8;1424:20; 1447:18;1448:5,24; 1450:2;1451:1;1452:9;	1453:2;1456:3; 1491:21,23;1499:17; 1543:9;1545:9; 1546:14;1547:12; 1562:20;1568:5,15; 1569:24;1580:9; 1594:13 surface (6) 1486:25;1493:18,21; 1508:24,26;1509:2 suspension (1) 1515:18 Sustain (1) 1521:19 Sustained (5) 1526:4;1563:23; 1592:10;1594:10; 1598:4 Suwanee (2) 1474:9;1478:13 sway (2) 1448:8;1449:6 swimsuit (2) 1459:18,18 swirling (1) 1515:16 switch (1) 1566:1 swore (1) 1485:13 sworn (2) 1429:16;1474:2 system (1) 1569:21 Systems (2) 1495:1,2	18;1555:21,24,24; 1558:26;1567:11; 1568:7,19,23,25; 1569:6;1573:11,15; 1576:4,6,10,12; 1579:17,20;1581:20, 21,21,25;1582:10; 1583:11,15,17,18,20, 25;1584:1,4;1585:2; 1591:2;1595:21; 1596:25;1597:26; 1598:9,13 Tales (5) 1517:14;1522:3; 1526:11;1569:3; 1581:11 talcum (19) 1456:10;1468:18; 1469:10;1530:6; 1532:2,7;1534:23; 1536:16,24;1537:16; 1548:13;1555:7; 1558:9;1560:4,12,21; 1561:6;1566:8; 1582:16 tale (1) 1553:16 talk (12) 1455:6,8;1464:18, 21,22;1470:11; 1490:12;1499:9; 1510:17;1537:14; 1547:26;1557:2 talked (8) 1491:11;1493:15; 1494:16;1508:17; 1520:22;1550:9; 1570:4;1574:20 talking (10) 1419:8;1421:20; 1498:17;1524:7,18; 1533:16;1557:15; 1574:8,11;1581:15 tall (1) 1504:25 tampered (2) 1567:1,4 tampering (3) 1466:5;1564:21; 1565:4 tape (4) 1424:15,21,23; 1446:10 tape-recording (1) 1450:21 teach (2) 1483:3,10 teasing (1) 1423:14 technicians (2) 1491:23,24 technique (18) 1490:22;1515:5;
T				
table (4) 1510:10,12;1533:20; 1534:2 talc (117) 1423:6;1447:9; 1458:13;1462:7; 1463:22;1466:18; 1467:9;1469:11,12; 1470:9,12,13,16; 1475:3;1509:9; 1512:19;1513:23; 1514:2,4,24;1515:3,6, 26;1517:3,17,20,25; 1518:4,7,18,20,24; 1519:2,14,25;1520:3,6, 9,13,17,26;1521:10,22; 1522:13;1523:2; 1524:10,21,24;1525:3, 6,20;1526:9,14,20,23; 1527:2,11,14,19,20; 1531:14,17,22,22; 1532:1,6,10,11,11; 1540:10,18;1545:16, 19;1549:7,8,11,14,15,				

February 25, 2019

1521:8,9,22;1522:6,12, 15;1524:9,20,25; 1525:2,5,13,15; 1578:14;1597:17,22 Technology (6) 1464:13;1491:11; 1545:21,23;1546:15; 1547:17 tedious (1) 1455:2 telescope (2) 1489:23;1490:1 telling (2) 1431:2;1505:12 tells (2) 1494:4;1513:6 TEM (57) 1456:7,12;1467:19; 1468:2;1491:16,21; 1504:18,21,22,23,26; 1505:3,12;1515:3; 1520:3;1529:7,10; 1533:19;1535:4,15; 1556:20;1557:11,25; 1558:11,21;1560:14, 23,24,24,26;1561:17; 1574:7,10,11,21; 1575:3,6;1577:22; 1578:2,5,7,8,9,11,14, 20,21;1584:9;1589:21; 1591:2,18;1592:17; 1594:23;1595:15; 1597:4,7,14 ten (27) 1421:22;1455:8; 1486:6,11,18;1504:25; 1505:19;1535:9,9,12; 1538:1;1542:4; 1548:16;1570:14; 1573:2,21,23;1574:4; 1575:2,5,10;1577:19; 1578:6;1581:18,19; 1583:2;1588:15 tend (1) 1475:9 ten-minute (1) 1570:18 tensile (3) 1562:26;1563:2,4 term (2) 1563:2;1590:3 terms (28) 1428:24;1460:7,15, 16;1497:20;1509:9; 1510:2;1518:19; 1526:7;1530:14; 1531:1;1533:24; 1534:22,22;1535:1; 1537:14,16;1543:14; 1556:20;1558:19; 1561:22;1567:5; 1571:4;1572:21; 1573:20;1575:9,15;	1581:4 terrific (1) 1418:6 test (25) 1467:17;1468:7; 1481:23;1495:17; 1509:12,17;1529:24; 1530:1,6;1531:11; 1535:15;1557:11; 1568:4,4,5;1570:5; 1571:5;1574:1;1581:4; 1587:5;1592:17; 1593:19;1594:22; 1597:4,14 tested (19) 1457:25;1463:25; 1464:4;1466:18,24; 1467:24;1469:12; 1494:11,11;1495:5; 1497:15;1514:19; 1531:2,13;1536:10; 1540:5;1564:20; 1567:22;1581:2 testified (4) 1457:6;1461:16; 1474:2;1561:4 testifies (2) 1421:7;1422:22 testify (7) 1420:17;1421:8; 1422:23;1457:3,24; 1464:15;1471:23 testifying (1) 1495:14 testimony (10) 1421:16,21;1456:21; 1457:2;1461:14; 1462:1;1498:21; 1550:23;1593:6; 1596:11 testing (52) 1456:17;1457:19,20; 1460:11,12;1467:7,7, 26;1468:10,13,15,23; 1469:3;1478:25; 1479:22;1484:9,10; 1485:1,3;1492:9,9; 1494:18;1498:22; 1509:9,15,18,23; 1513:23;1514:2; 1522:21;1528:4; 1531:1;1536:24; 1545:4,25;1558:20,26; 1568:8,16;1570:23; 1574:4;1575:17,21; 1581:7;1583:8;1590:2, 4,13;1591:14,15,18; 1598:9 tests (3) 1459:5;1463:24; 1497:14 Texas (1) 1494:24	texture (1) 1486:25 theirs (1) 1589:18 theory (1) 1562:24 therefore (2) 1454:23;1549:6 thick (5) 1547:23;1548:24; 1549:11,14,25 thin (1) 1586:8 thinking (6) 1449:19;1452:7,14; 1453:20;1517:6; 1566:4 third (3) 1427:8;1457:19; 1513:24 Thirty-five (2) 1480:3,4 thorough (2) 1591:8,11 though (4) 1447:13;1483:11; 1545:15;1594:12 thought (2) 1453:17;1597:10 thoughts (8) 1425:6,7;1449:4,25; 1451:15;1454:5,7; 1455:1 thousand (1) 1586:15 threatened (2) 1428:9,12 threatening (2) 1428:8,18 threats (1) 1428:4 three (61) 1418:14;1419:16; 1422:20;1424:2,14,16, 25;1425:12;1426:12, 14,17,21;1427:2,6,25; 1428:6,7,16,21;1447:6; 1449:20;1450:13,16; 1452:5,5,10,17; 1454:11,24,25; 1455:14;1457:25; 1464:24;1471:25; 1499:13;1503:13; 1504:5,26;1508:25; 1509:4;1512:24,25; 1526:18;1530:16; 1536:10;1542:5; 1548:26;1550:24; 1551:11;1552:17,19, 21,22;1558:6,16; 1566:7;1574:7,14; 1575:5;1578:15; 1591:9	throughout (3) 1460:24;1556:21; 1590:21 throwing (1) 1493:2 Thursday (2) 1422:26,26 thus (2) 1428:19;1429:5 tilt (1) 1584:9 timed (1) 1450:16 time-release (2) 1496:16,22 times (18) 1426:3,21,23; 1449:8;1460:6,10,11; 1469:25;1475:9; 1483:11;1484:17; 1504:6;1505:19; 1519:24;1537:19; 1551:12,25;1598:10 tin (4) 1469:19,20,21,24 tins (1) 1469:22 tiny (1) 1467:17 tip (3) 1502:1,2;1518:11 title (1) 1546:11 titled (1) 1557:16 TM (5) 1557:4,21;1559:3; 1589:21;1590:6 tobacco (2) 1507:22,23 today (18) 1420:16,17,19; 1422:6;1446:21; 1448:14;1450:24; 1451:6;1452:6; 1495:10;1510:4; 1558:12;1564:11,14; 1582:5,10;1597:13; 1598:17 together (7) 1476:21;1480:21; 1485:5;1502:7; 1517:22;1550:13; 1572:15 told (11) 1427:24;1430:21,22; 1470:21;1471:25; 1473:7;1498:9;1522:5; 1524:8;1558:7;1561:7 tomorrow (5) 1420:18,19;1598:19; 1599:2,7 took (7)	1424:9;1458:10; 1466:4;1485:13; 1507:18;1544:15; 1591:9 tool (12) 1500:4;1504:7,8,16; 1509:6;1510:19; 1512:23;1513:5,24,25; 1514:3;1578:5 tools (4) 1477:26,26;1514:5,9 top (29) 1460:19;1466:6,8; 1475:24;1488:7,8; 1501:18;1503:7; 1515:4;1518:7,16,18; 1520:4;1522:25; 1541:14;1543:17; 1548:18;1550:2; 1552:15;1565:2,8,10, 15,16,17,19;1566:5,7, 14 topic (1) 1508:12 tops (7) 1458:14;1565:6,6, 21;1566:15,16;1567:1 tortured (1) 1453:13 total (1) 1498:15 touching (2) 1549:2;1572:5 towards (4) 1419:26;1430:5; 1448:9;1549:12 Tower (1) 1487:25 Towers (2) 1487:18,19 town (1) 1420:15 tracks (1) 1565:11 Trade (2) 1487:18,22 train (1) 1482:15 trained (1) 1545:9 trans (1) 1500:3 transcript (4) 1419:9;1420:4; 1452:2;1453:22 Transmission (29) 1464:18;1477:21; 1478:21;1479:26; 1494:5;1499:12,15; 1501:17;1502:16; 1503:3,4;1506:16,19; 1507:5,25;1508:8,21; 1514:6,11,21;1519:9;
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February 25, 2019

1521:3;1528:9;1544:7; 1553:9;1571:18; 1574:2,5;1591:7 transmitting (1) 1508:26 transportation (1) 1489:9 trash (1) 1493:1 tread (1) 1418:4 tremolite (107) 1465:5,8;1467:8,11; 1496:3,7,8,9;1509:3; 1514:26;1524:21; 1525:3,7;1526:22; 1527:22,25;1533:18, 22;1538:6,7,10,11,14, 16,16,22,23;1539:1,2, 24,25;1540:3,14; 1541:25;1542:10; 1543:6,9,25;1544:25; 1545:2,10,15,18; 1546:4,6,6,15,16,19, 25;1548:8;1549:6,6, 21;1550:6,11,25; 1551:16;1552:25; 1553:2,12,13;1554:13, 17,18,18,21,22;1555:4, 14;1559:12,14;1560:5, 8;1575:13,25;1576:4,7, 8,13,18;1579:5; 1580:24;1582:11,14, 15;1586:3,5,6,8,18,20, 25;1587:6,17,19; 1588:5,6,10;1589:13; 1592:3,7,13;1593:12, 15,17,25 tremolite/actinolite (1) 1553:19 trial (11) 1417:16,25,25; 1418:25;1423:6; 1429:9;1430:2;1447:8; 1451:22;1472:23; 1473:4 trials (1) 1423:9 tried (1) 1520:6 Troutman (1) 1429:21 T-R-O-U-T-M-A-N (1) 1429:21 true (6) 1450:4;1470:18; 1495:7;1560:2; 1588:13,13 truly (1) 1563:18 truth (1) 1422:8 try (10)	1430:8;1449:2,14; 1452:18;1454:13; 1475:10;1481:6,8; 1555:13;1589:10 trying (6) 1449:13;1470:14; 1500:7;1515:21; 1522:2;1533:21 tube (2) 1517:26;1522:25 tungsten (1) 1501:24 turf (1) 1495:25 turn (4) 1417:24;1505:23; 1565:6;1570:23 turning (1) 1502:13 turns (2) 1478:11;1574:23 TV (5) 1449:16;1451:24; 1452:25;1454:22; 1598:21 twice (1) 1460:13 Twin (2) 1487:18,19 two (41) 1418:15;1452:22; 1457:11,13;1458:18; 1463:25;1478:7; 1491:20;1492:23; 1496:12;1497:8; 1501:1,10,16;1502:2; 1510:3;1511:18; 1514:23;1527:17; 1533:17;1538:1; 1539:10,13;1540:11, 12;1542:6;1546:24; 1553:13;1554:8; 1555:9;1560:26; 1571:12;1577:14; 1578:12;1579:7; 1583:3,17;1585:5; 1588:26;1590:26; 1591:4 type (23) 1459:8,15,22; 1460:20,20,22; 1461:12;1476:7,24; 1478:15;1485:25; 1486:17;1493:12; 1496:9;1519:13; 1525:7;1538:5;1539:7; 1543:24;1552:24; 1575:9;1576:5;1581:9 types (17) 1459:23;1475:13,21; 1489:12;1492:9; 1509:25;1526:17,25; 1528:20,23;1545:7;	1551:24;1559:25; 1572:25;1575:11; 1576:1,14 typical (3) 1490:10;1519:4; 1528:20 typically (3) 1501:13;1504:26; 1527:6 U ultimate (1) 1451:10 ultimately (2) 1485:12;1595:18 Um (9) 1449:13;1453:16; 1464:13;1488:17; 1498:4,18;1530:16; 1534:15;1573:14 unable (1) 1429:26 unambiguously (1) 1429:6 unanimously (1) 1427:11 under (20) 1464:17,20;1477:14; 1500:8,12;1507:25; 1519:9;1534:3; 1556:14,24,24; 1557:10;1560:13,20; 1561:18;1564:4; 1565:14;1574:5; 1581:1;1593:19 understands (1) 1470:20 unequivocal (9) 1419:20;1425:20,23, 24,25;1428:24;1429:2; 1454:14,22 unequivocally (2) 1418:24;1426:24 unfortunately (1) 1473:17 unhappy (1) 1417:26 Union (2) 1490:6,6 unique (1) 1547:20 unit (1) 1586:14 United (1) 1507:6 University (1) 1524:19 unknown (2) 1457:21;1458:5 unless (4) 1426:21;1526:15; 1527:20;1591:16	unqualified (2) 1429:18;1448:4 unsealed (2) 1457:25;1458:4 up (54) 1417:26;1419:8; 1426:19;1450:9; 1451:2;1455:6; 1457:14;1469:4; 1475:5,26;1486:16; 1488:4,10,11;1489:23; 1492:2;1494:2; 1497:15;1499:25; 1501:15;1502:11,14, 22;1504:5;1508:11; 1510:4;1511:4; 1514:25;1515:3; 1520:7;1525:5;1531:9; 1533:13;1534:18; 1535:22;1539:4; 1541:2;1549:14; 1550:13;1551:20; 1555:11,11,11; 1556:19;1568:20; 1572:7;1577:20; 1578:10,11;1581:20; 1586:17;1588:11; 1589:15;1598:7 upkeep (1) 1498:7 upon (7) 1462:18;1467:26; 1468:14;1471:14; 1487:7;1531:16; 1536:23 upper (8) 1488:4;1548:21; 1549:9,14,24,26; 1569:14;1588:23 upset (1) 1427:26 urea (1) 1496:19 usage (1) 1468:21 use (45) 1422:6;1454:13; 1462:10;1465:9; 1468:25;1475:21,21; 1477:2,23,24;1482:5; 1483:4;1484:21,23; 1491:15;1497:14; 1504:22;1508:7; 1509:4;1512:23; 1514:19;1516:18; 1518:11;1520:5,6,12, 15;1522:15;1525:21; 1528:6,8;1529:4,8; 1534:24;1540:24; 1545:8;1557:24; 1568:8;1574:4;1575:3; 1581:23;1597:15,17, 19,22	used (60) 1459:16,23;1460:4, 20;1463:15,19;1464:6; 1468:15,19;1469:7,11, 12,19,20;1470:9,11; 1484:19;1496:1; 1497:6;1506:16; 1507:11;1509:17; 1514:3,8,21,22; 1516:13,14,16; 1517:14;1524:24; 1526:20;1529:1,5; 1531:17,22;1532:1,2,7; 1538:22;1540:25,25; 1545:13;1554:25; 1555:2,16;1556:21; 1558:15,19,26; 1563:18;1574:2,16; 1575:4;1576:12; 1581:12,12,25;1595:9; 1597:4 uses (9) 1456:12;1468:5; 1480:18,18;1482:7; 1499:10;1502:6; 1520:25;1590:2 using (44) 1457:4;1458:25; 1460:23;1463:16; 1469:22,23;1475:14; 1480:15,15;1487:25; 1489:22;1493:12; 1499:23;1500:13; 1501:7;1504:2; 1512:19;1513:4; 1515:9,14;1518:20,21; 1520:15;1521:7; 1522:12;1525:25; 1527:10;1529:1,3; 1530:10;1540:6; 1549:16;1552:15,16; 1558:14;1561:2; 1573:15;1575:5; 1576:20;1577:4,16; 1580:3;1595:25; 1597:2 usually (9) 1474:25;1476:18; 1477:3;1492:1; 1493:10;1495:19; 1499:24;1516:18,19 Utah (1) 1495:1 utilize (1) 1546:5 V vacuum (3) 1494:1,2,4 validated (1) 1561:10 valuable (1)
---	--	--	---	--

1461:2 varieties (3) 1456:15;1457:10; 1592:19 variety (2) 1589:23;1591:17 various (4) 1464:3;1495:2; 1498:12;1531:4 Vaughn's (1) 1420:14 ventilation (1) 1482:14 verdict (4) 1427:12;1429:2,20; 1451:19 verify (3) 1543:23;1544:16,17 vermic (1) 1497:4 vermiculite (14) 1486:11,11,19; 1496:2,2,7,17;1554:26; 1555:2,12,16,18,25,26 Vermont (11) 1525:6;1531:22; 1532:1,11;1572:23; 1573:14,15;1575:22; 1576:10,12;1585:22 Vermonts (1) 1586:4 version (1) 1479:13 versus (7) 1427:9;1428:21; 1429:12,22;1505:12; 1537:16;1579:3 vibrating (1) 1579:19 vibration (1) 1577:9 vibrational (1) 1500:10 video (7) 1420:14;1423:26; 1447:4;1451:8;1461:6, 9;1469:13 videos (2) 1458:11,12 view (3) 1451:10;1452:22; 1453:6 views (2) 1451:15,17 vines (1) 1496:18 violate (2) 1417:15,20 virus (2) 1489:3,8 voice (1) 1474:6 volcanic (1)	1538:17 voltage (2) 1501:23,25 volts (1) 1501:23 Voluntary (1) 1491:9 volunteers (1) 1489:17 vote (1) 1485:17 W waist (10) 1459:11,17;1462:3, 9;1467:16;1468:3,19; 1469:3,19;1470:3 wait (2) 1431:12;1448:6 walk (2) 1451:17;1482:5 walks (2) 1482:8,8 Warrington (1) 1428:22 W-A-R-R-I-N-G-T-O-N (1) 1428:22 Washington (1) 1478:11 watch (3) 1424:21,23;1516:26 watched (3) 1424:3,6;1450:4 watching (1) 1451:8 water (3) 1511:9;1515:14; 1516:11 wave (3) 1500:10,11;1577:8 wavelength (5) 1500:14;1501:10,13, 16;1502:1 wavelengths (2) 1580:4,5 way (37) 1421:5,26;1428:3; 1430:7,18;1447:24; 1448:1;1453:1,2; 1462:25;1486:16; 1490:25;1493:6,11; 1496:20;1499:15; 1509:22;1512:23; 1514:8;1515:23; 1519:16;1529:4,11,23; 1530:2,10;1541:24; 1544:24;1562:12,13; 1565:16;1567:14; 1577:20;1580:19,19; 1582:4;1596:5 ways (4) 1452:22;1474:25;	1555:23;1566:15 weaknesses (2) 1475:20;1477:25 wearing (2) 1459:18;1461:9 Webber (8) 1420:24;1456:22; 1457:6;1491:11; 1521:6;1543:7; 1550:23;1551:4 week (3) 1446:16;1473:8; 1492:1 weekend (3) 1417:3;1450:3; 1472:23 weigh (1) 1527:25 weight (9) 1467:15;1469:5; 1471:19;1511:2; 1527:9;1540:24; 1541:1;1577:25; 1578:1 weights (1) 1513:10 well-known (1) 1496:7 weren't (1) 1495:9 Westinghouse (1) 1497:18 what's (16) 1431:2;1468:8; 1469:4;1476:23; 1479:11;1492:18; 1504:11;1515:19; 1517:25;1529:15; 1550:26;1570:25; 1572:21;1583:14; 1590:10;1595:2 Whenever (1) 1417:3 whereabouts (1) 1482:3 Whereupon (36) 1431:15;1432:3; 1433:3;1434:3;1435:3; 1436:3;1437:3;1438:3; 1439:3;1440:3;1441:3; 1442:3;1443:3;1447:4; 1472:19;1479:19; 1502:9,20;1523:19,23; 1524:2,13;1532:16; 1566:2;1568:1;1570:2, 17,20;1571:2;1572:13; 1578:24;1580:13; 1593:6;1596:11; 1599:4,8 wherever (1) 1499:23 white (1) 1516:5	whole (7) 1477:15;1492:5; 1535:11,13;1568:23; 1584:9,10 whose (1) 1596:23 wide (4) 1501:2;1537:19; 1554:3;1556:18 width (8) 1500:22;1528:14,17; 1537:17;1550:24,26; 1556:17;1558:5 William (4) 1420:16;1461:22; 1473:24;1474:8 winchite (7) 1496:8;1539:1; 1554:22;1555:4,14,15; 1560:8 wind (1) 1417:26 Windsor (2) 1585:18,21 wish (1) 1471:5 Wisholek (1) 1429:12 W-I-S-H-O-L-E-K (1) 1429:12 withdrawn (1) 1561:3 within (2) 1417:25;1537:19 without (12) 1417:14,17,23; 1427:13;1428:3; 1431:2,8;1466:8; 1527:3;1540:24; 1565:17;1574:9 witness (38) 1420:16,23;1421:3; 1455:8;1470:21,22; 1471:13,13,21,21; 1472:26;1473:22; 1474:5,8;1475:6,9; 1476:6;1500:20,23,25; 1501:4;1502:9,16,19, 20,21;1508:6;1510:13; 1523:22;1526:6; 1551:7,9;1562:14; 1563:20;1571:2; 1592:15;1595:2; 1596:18 witness' (3) 1421:20;1471:10,11 witnesses (2) 1470:25,26 witness's (1) 1500:21 won (2) 1451:6,7 wonder (2)	1417:5;1473:5 wondered (1) 1450:3 wonderful (3) 1417:3,7;1472:22 word (2) 1454:13;1596:14 words (2) 1418:22;1460:14 work (27) 1427:19;1480:6; 1481:18;1482:21; 1484:7;1485:22,25; 1487:8;1488:15,21,25; 1489:11,20;1490:15; 1491:24;1494:16; 1499:3,4,6;1507:5,12; 1521:16;1529:6; 1533:5;1545:21; 1567:5;1594:18 worked (3) 1487:22;1495:15; 1564:10 workers (1) 1531:23 working (4) 1478:16;1507:13; 1516:21;1569:24 Workman's (1) 1498:5 works (2) 1496:20;1537:8 world (7) 1458:11;1484:12; 1486:13;1487:18,22; 1525:18;1537:9 worries (1) 1431:14 worry (1) 1473:5 worrying (1) 1431:3 WR (2) 1486:13,20 writing (1) 1422:26 written (4) 1456:4;1463:11; 1524:16;1525:5 wrong (4) 1450:19;1476:12; 1484:18;1500:7 wrote (3) 1428:7;1429:15; 1495:12 X x-ray (8) 1489:23;1490:1; 1503:8,9,9;1508:23; 1514:5;1524:22 XRD (1)
--	---	--	---	---

1514:5	1523:11	1534:15	1558:24;1595:8,12,13	256 (1)
Y	1,310,000 (1)	1940s (7)	2,000 (1)	1518:14
year (9)	1535:25	1469:20,22,23,24;	1485:16	26 (1)
1479:6;1483:3;	1.1 (1)	1470:17;1506:23;	2.5 (2)	1599:9
1491:19;1498:20,23;	1535:10	1531:18	1542:5,5	27 (1)
1532:4;1561:3;	1.5 (3)	1940's (3)	2.56 (1)	1521:5
1566:10;1586:6	1595:7,12,12	1460:17,18,21	1527:12	275RB (1)
years (37)	1.605 (2)	1947 (1)	2.57 (1)	1565:2
1458:6;1464:23;	1577:4;1580:3	1506:21	1462:11	27A (1)
1478:7;1480:3,4;	10 (1)	1950 (1)	2.7 (1)	1524:12
1481:13;1484:8;	1519:5	1506:19	1527:14	28 (2)
1485:13;1486:6;	10,000 (1)	1950s (3)	2.85 (1)	1428:22;1493:12
1487:13;1489:24;	1504:24	1507:4,22;1576:4	1527:19	280 (1)
1491:20;1493:4,13;	101 (1)	1951 (1)	2:15 (2)	1429:13
1494:11,14;1497:7,7,7;	1577:16	1507:14	1523:16,17	2nd (6)
1498:17,19,24;1499:1;	102,000 (1)	1954 (1)	20 (8)	1462:2;1533:2,8,13;
1509:18,22;1515:12;	1586:17	1507:21	1486:6;1540:12,13;	1534:4,9
1529:20;1531:4;	11 (1)	1955 (1)	1551:25;1577:16;	3
1545:16,17,17;	1585:12	1507:14	1588:17,18,19	
1554:17,17;1562:10,	11.2 (1)	1967 (3)	20,000 (3)	3 (1)
10;1582:11;1590:22	1554:2	1531:19;1532:3;	1478:14;1498:4,6	1486:13
yellow (2)	1116 (1)	1573:9	200 (2)	3,000 (2)
1569:14;1580:23	1428:22	1968 (1)	1511:24;1567:11	1595:16;1596:22
York (30)	12 (5)	1496:1	2000s (2)	3,500 (4)
1423:24;1427:10;	1519:6;1537:24;	1970s (6)	1531:9;1539:14	1518:26;1536:11;
1461:16,16;1462:24,	1585:12,17;1591:23	1463:21;1521:9,17,	2001 (1)	1595:16;1596:22
25;1471:16;1485:23,	12,000 (2)	23,26;1596:2	1429:14	3.0 (1)
23;1486:1,2,21,23;	120,000 (1)	1974 (2)	2003 (1)	1527:16
1487:5,9,16,19;	1501:23	1522:4;1524:9	1532:3	30 (29)
1488:14,15,16;	125 (1)	1977 (2)	2004 (1)	1450:10,13;1460:11;
1494:19,25;1495:1;	1485:9	1586:22;1587:6	1532:8	1466:3;1494:14;
1507:9,24;1509:23,24;	13 (2)	1978 (3)	2006 (1)	1498:16,19,23;
1552:13;1581:20,25	1536:14,25	1571:5,14;1572:1	1478:13	1509:18;1518:2;
Z	13,000 (3)	1496:1	1535:11	1530:5;1531:2,13;
zero (10)	1447:16,24;1450:7	1980 (2)	2010 (2)	1532:10;1534:17;
1510:26;1511:2,7,	14 (1)	1531:22;1532:4	1427:11;1429:23	1535:19;1536:14,25;
22,23;1512:5;1522:17;	1591:9	1980s (2)	2012 (1)	1566:19,24;1567:14,
1525:6;1536:16;	14,000,500 (1)	1480:11;1529:3	1539:14	19,22;1574:20;
1584:8	1595:5	1983 (3)	2016 (1)	1575:18;1587:5;
zone (2)	14,500,000 (1)	1477:12;1479:9,10	1428:23	1588:14,18;1590:22
1468:26;1554:25	1595:9	1984 (1)	2017 (11)	30024 (1)
0	1405 (1)	1479:23	1462:2;1529:18,22;	1474:9
0.5 (3)	1452:2	1985 (2)	1530:2,6;1533:2,8,13;	304 (1)
1540:8;1554:2;	1406 (2)	1479:24;1573:9	1534:4,9;1570:4	1587:3
1561:13	1424:24;1452:2	1988 (1)	2018 (4)	30-page (1)
001 (2)	14th (1)	1478:7	1461:19;1570:6;	1485:10
1511:10;1579:10	1461:19	1989 (1)	1571:10;1573:1	30th (1)
01 (3)	15 (8)	1557:20	2019 (1)	1498:22
1555:16,19;1556:2	1421:23;1460:6,10;	1990 (2)	1599:9	31 (1)
042 (1)	1469:24;1486:6;	1588:8;1595:26	22,000 (1)	1487:24
1580:12	1535:22,24;1537:22	1990s (2)	1577:19	310 (2)
075 (2)	150 (1)	1480:11;1481:4	220 (1)	1529:16;1533:1
1539:23,24	1519:14	1991 (4)	1429:13	310-A (3)
1	16 (2)	1517:13;1574:13;	22262 (1)	1479:12,15,19
1 (1)	1520:25;1571:10	1585:11;1586:2	1590:18	311 (1)
	17 (2)	1995 (1)	22262-1 (2)	1529:16
	1534:17;1535:19	1529:11	1574:9;1575:7	314 (1)
	173 (1)		22262-2 (4)	1571:1
	1461:20	2	1463:18;1520:24;	315 (1)
	18 (1)		1574:10,23	1572:12
	1534:15	2 (6)	25 (2)	316 (1)
	19 (1)	1465:3;1554:3;	1487:23;1556:18	1571:1

32 (1) 1480:2 341,000 (1) 1586:17 35 (2) 1486:11,18 37 (1) 1513:4 3945 (1) 1474:8 4	1561:4;1564:9			
	5756 (1) 1564:13	9		
	6	9.45 (1) 1548:14 9:00 (1) 1446:22 9:30 (2) 1598:20;1599:9 90 (2) 1577:11;1578:10 90s (3) 1582:5,9,9 957 (1) 1429:22 99.9 (1) 1555:20		
4 (6) 1424:7,8,10; 1430:23;1557:19; 1589:20 4,120,000 (1) 1535:25 4.4 (2) 1540:7,11 4:30 (4) 1418:9;1430:24; 1594:15;1598:17 40 (1) 1588:14 40,000 (1) 1485:19 400,000 (1) 1494:13 40s (2) 1470:10;1531:9 40-some (1) 1498:4 41 (2) 1478:14;1498:7 4106 (1) 1429:23 42.37 (1) 1513:15 444 (1) 1427:10 5	6 (2) 1504:6;1551:11 60 (1) 1581:19 63,000 (1) 1577:20 65208-001-002 (1) 1549:21 66514 (1) 1552:12 67 (1) 1573:13 672 (1) 1429:22 68233 (1) 1571:20 69042 (1) 1579:8 7			
	7			
	7:00 (1) 1446:22 70 (5) 1429:22;1458:5,6; 1573:24;1588:25 7024 (11) 1557:4,21;1559:3; 1589:21;1590:7; 1591:14,19;1592:17; 1596:23;1597:4,14 73 (1) 1427:10 75 (1) 1547:13 75th (1) 1539:24			
5 (1) 1561:12 50 (3) 1554:3;1583:3,5 50s (1) 1470:10 530 (1) 1579:20 53-A (1) 1422:9 55 (1) 1486:19 56 (4) 1534:16;1561:3; 1592:4,4 57 (1) 1534:16 5755 (2)	8			
	8			
	8,000 (4) 1518:10;1535:22; 1537:4,7 8,600 (1) 1536:1 8,700 (2) 1535:22;1536:2 8,800 (1) 1535:22 8:15 (1) 1492:23 85 (1) 1573:14 8th (1) 1557:20			

Exhibit 20

SUPERIOR COURT OF NEW JERSEY
LAW DIVISION: MIDDLESEX COUNTY
DOCKET NO. MID-2912-17AS
APPELLATE DOCKET NO. _____

RICARDO RIMONDI AND PILAR RIMONDI,)
)
)
 Plaintiffs,)
) TRANSCRIPT
 v.) OF
) TRIAL
 BASF CATALYSTS LLC, et al.,)
)
 Defendants.)
)
 _____)
)

Place: Middlesex County Courthouse
56 Paterson Street
New Brunswick, New Jersey 08903

Date: Tuesday, March 5, 2019
(Volume 1 of 2)
(Pages 1 - 200)

BEFORE:

HON. ANA C. VISCOMI, J.S.C. and JURY

TRANSCRIPT ORDERED BY:

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<p style="text-align: right;">3</p> <p>1 INDEX</p> <p>2 WITNESSES DIRECT CROSS REDIRECT RECROSS</p> <p>3 FOR THE PLAINTIFF:</p> <p>4 WILLIAM LONGO 7 136 210</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p style="text-align: right;">5</p> <p>1 COURT OFFICER: Jury's entering.</p> <p>2 (Jury enters.)</p> <p>3 THE COURT: Good morning. Please be seated.</p> <p>4 Make sure cell phones are turned off.</p> <p>5 Counsel, you may be seated as well. You're</p> <p>6 welcome.</p> <p>7 Today is March 5, 2019. We are here in the</p> <p>8 trial of the matter of Ricardo and Pilar Rimondi versus</p> <p>9 Johnson & Johnson, Docket Number 2912-17.</p> <p>10 Could I have appearances, please, on behalf</p> <p>11 of the plaintiffs.</p> <p>12 MS. COOPER: Yes, your Honor. Good morning,</p> <p>13 members of the jury. Monica Cooper on behalf of the</p> <p>14 plaintiffs.</p> <p>15 MR. LINDER: Good morning, everyone. Mark</p> <p>16 Linder, also on behalf of the plaintiffs.</p> <p>17 MR. COTILLETTA: Good morning, everyone. Joe</p> <p>18 Cotilletta on behalf of the plaintiffs.</p> <p>19 MS. SYMPHORIEN-RESTREPO: Hello, everyone.</p> <p>20 My name is Leydyluz Symphorien-Restrepo, on behalf of</p> <p>21 the plaintiffs.</p> <p>22 THE COURT: And on behalf of the defendants</p> <p>23 Johnson & Johnson.</p> <p>24 MR. DUBIN: Hello. Morton Dubin, on behalf</p> <p>25 of Johnson & Johnson. Trying to remember where I am.</p>

<p style="text-align: right;">6</p> <p>1 MS. BROWN: Good morning, everyone. Alli</p> <p>2 Brown on behalf of Johnson & Johnson.</p> <p>3 MR. HYNES: Kevin Hynes on behalf of Johnson</p> <p>4 & Johnson.</p> <p>5 THE COURT: Mr. Hynes, you're just so</p> <p>6 courteous to Ms. Brown.</p> <p>7 MS. BROWN: I know, isn't he? I know.</p> <p>8 THE COURT: So, members of the jury, as you</p> <p>9 may recall, we are in the plaintiffs' case. We</p> <p>10 completed the testimony of the corporate representative</p> <p>11 yesterday. Plaintiffs may call their next witness.</p> <p>12 MS. COOPER: Your Honor, the plaintiffs call</p> <p>13 Dr. William Longo.</p> <p>14 Good morning.</p> <p>15 THE WITNESS: Good morning. Good morning,</p> <p>16 your Honor.</p> <p>17 THE COURT: Good morning.</p> <p>18 COURT OFFICER: Place your left hand on the</p> <p>19 bible. State your full name, spell your last.</p> <p>20 THE WITNESS: William Edward Longo,</p> <p>21 L-o-n-g-o.</p> <p>22 W I L L I A M E D W A R D L O N G O, sworn.</p> <p>23 COURT OFFICER: Keep your voice up. You're</p> <p>24 being recorded.</p> <p>25 THE WITNESS: Yes, ma'am.</p>	<p style="text-align: right;">8</p> <p>1 it, see how it behaves, strengths, its weaknesses and</p> <p>2 so on.</p> <p>3 Q I like roadmaps. It helps us stay on track</p> <p>4 here. So I made you a roadmap.</p> <p>5 First of all, is that you?</p> <p>6 A That's me.</p> <p>7 Q And where are you in that picture?</p> <p>8 A I'm sitting in our laboratory of MAS, and that's</p> <p>9 one of our new field emission scanning electron</p> <p>10 microscopes.</p> <p>11 Q I've called you the asbestos microscopist.</p> <p>12 What is that?</p> <p>13 A That would be a microscopist or somebody who runs</p> <p>14 a, we call them tools, analytical microscope or of any</p> <p>15 sort, and to analyze the sample for asbestos.</p> <p>16 Q So this is our stops along our roadmap.</p> <p>17 Okay? I'm first going to talk about you, the asbestos</p> <p>18 microscopist, and then we're going to talk a little</p> <p>19 bit -- we've heard a lot of complicated terms here, so</p> <p>20 I want you to kind of break those down. We're going to</p> <p>21 talk about testing 101. Okay? Then we're going to</p> <p>22 talk about good testing and bad testing. And if we</p> <p>23 make the right, the good testing we don't end up at</p> <p>24 this dead end and we get to your test results. Okay?</p> <p>25 A That's fine.</p>
<p style="text-align: right;">7</p> <p>1 MS. COOPER: If I could get plaintiffs' Elmo</p> <p>2 one, please.</p> <p>3 DIRECT EXAMINATION BY MS. COOPER:</p> <p>4 Q Good morning, Dr. Longo.</p> <p>5 A Good morning.</p> <p>6 Q Could you first just tell us why you are</p> <p>7 here?</p> <p>8 A To testify about our research and analysis of</p> <p>9 Johnson & Johnson's cosmetic talc.</p> <p>10 Q Okay. Who are you?</p> <p>11 A My name is Bill Longo. I'm from Cumming, Georgia.</p> <p>12 Not from Cumming, Georgia, but that's where I live,</p> <p>13 which is one of the many suburbs that are around</p> <p>14 Atlanta.</p> <p>15 Q You said that you tested the products in this</p> <p>16 case, Johnson & Johnson Baby Powder?</p> <p>17 A Yes, ma'am.</p> <p>18 Q Can you tell me what exactly is it that you</p> <p>19 do?</p> <p>20 A I'm a material scientist. I'm the president of a</p> <p>21 company called Materials Analytical Service, or MAS,</p> <p>22 and we're a research analytical consulting laboratory,</p> <p>23 so we work on all kinds of interesting things. And as</p> <p>24 a material scientist one of the things that I do is how</p> <p>25 to characterize any type of material to see what's in</p>	<p style="text-align: right;">9</p> <p>1 Q I want to talk to you a little bit about what</p> <p>2 I call the name game. And finally we're going to get</p> <p>3 to Mr. Rimondi's exposure.</p> <p>4 A Okay.</p> <p>5 Q Are you prepared to talk about each of those</p> <p>6 kinds of areas?</p> <p>7 A Yes, I am.</p> <p>8 Q So, first of all, let's learn a little more</p> <p>9 about you. I know you gave me kind of a general</p> <p>10 overview, but I've got your CV here and I want to talk</p> <p>11 to you a little bit about it.</p> <p>12 MS. COOPER: Plaintiffs, at this time, offer</p> <p>13 Plaintiff's 143. I'll hand that over to defense</p> <p>14 counsel.</p> <p>15 THE COURT: Are you offering it, is that the</p> <p>16 CV?</p> <p>17 MS. COOPER: Yes, your Honor.</p> <p>18 THE COURT: Are you offering it into</p> <p>19 evidence?</p> <p>20 MS. COOPER: I offer it for demonstrative</p> <p>21 use.</p> <p>22 MR. DUBIN: I have no objection for</p> <p>23 demonstrative use.</p> <p>24 THE COURT: Absolutely.</p> <p>25 MS. COOPER: Your Honor, may I approach?</p>

<p style="text-align: right;">10</p> <p>1 THE COURT: Absolutely.</p> <p>2 BY MS. COOPER:</p> <p>3 Q Dr. Longo, I've got a copy here of your CV,</p> <p>4 and I want to talk with you about a few areas of this</p> <p>5 so we get a general idea about who you are. Okay?</p> <p>6 A Sure.</p> <p>7 Q So first of all, can you tell me what you got</p> <p>8 your bachelor's degree in first?</p> <p>9 A I received my bachelor's in microbiology with a</p> <p>10 minor in chemistry.</p> <p>11 Q That's what we see here. Why did you want to</p> <p>12 go into microbiology?</p> <p>13 A 'Cause it was a science field and my ultimate goal</p> <p>14 was to get in veterinarian school.</p> <p>15 Q We heard from Dr. Brody earlier last week</p> <p>16 he's into zoology. You were thinking about</p> <p>17 veterinarian school?</p> <p>18 A Sadly, I didn't get in.</p> <p>19 Q Fair enough. So then what did you do after</p> <p>20 that?</p> <p>21 A Went to plan B, which was to go to graduate school</p> <p>22 in material science and engineering. Didn't start out</p> <p>23 that way, but that's where I ended up, and then</p> <p>24 proceeded from there.</p> <p>25 Q Can you tell us what exactly, when you say</p>	<p style="text-align: right;">12</p> <p>1 The result is me. You can think about when</p> <p>2 soda cans used to be a steel can with a seam down the</p> <p>3 side, it was a material scientist who came up with the</p> <p>4 right mixture of aluminum copper, aluminum alloy, to</p> <p>5 make your current cans that we see, made in two pieces,</p> <p>6 and it was cheaper to make and easier to recycle.</p> <p>7 On the ceramic side, it was a material</p> <p>8 scientist who developed the ceramic heat shields for</p> <p>9 the space shuttle.</p> <p>10 The last thing that material scientists do is</p> <p>11 what I call forensic engineering where something has</p> <p>12 gone wrong and a product has failed or there's a</p> <p>13 problem on a manufacturing line. Material scientists</p> <p>14 are really good at tracing down why did it break or why</p> <p>15 is there a corrosion problem or why is the film on the</p> <p>16 glass on a high-rise starting to discolor. And we do a</p> <p>17 lot of that.</p> <p>18 So we can tell you where materials work and</p> <p>19 don't work because of temperature or stress or, and</p> <p>20 we're sort of the go-between all of the other</p> <p>21 engineering groups. The civil engineer and the</p> <p>22 mechanical engineer building a bridge will get involved</p> <p>23 with a material scientist, what is the newest alloys</p> <p>24 and the strengths and the concrete, et cetera. So we</p> <p>25 sort of know a little bit about a lot of different</p>
<p style="text-align: right;">11</p> <p>1 material science, what is that?</p> <p>2 A It's an engineering field that literally studies</p> <p>3 materials, and these materials are typically made up of</p> <p>4 things like metal or metallurgy, ceramics or minerals</p> <p>5 like asbestos, polymers or plastics.</p> <p>6 And then an area I spent a lot of time in</p> <p>7 graduate school is biomaterials. These would be</p> <p>8 devices that are implanted into the body such as a hip</p> <p>9 replacement or an interocular lens if you have a</p> <p>10 cataract that needs to be removed and replaced or an</p> <p>11 artificial knee.</p> <p>12 And as a material scientist we try to design</p> <p>13 these types of devices, the biomaterials where, one,</p> <p>14 they can stand up to the riggers of being in the body,</p> <p>15 and two, not cause any adverse reactions inside the</p> <p>16 body.</p> <p>17 Material scientists also develop new</p> <p>18 materials. All the semiconductor advances over the</p> <p>19 last 20 years where they're getting the memory up</p> <p>20 higher and the chip smaller, they have to go to more</p> <p>21 exotic types of materials, it's material scientists who</p> <p>22 work with the electrical engineers to come up with</p> <p>23 better and better materials to withstand the heat</p> <p>24 generated. Most of your CEOs in semiconductor</p> <p>25 manufacturing companies are material scientists.</p>	<p style="text-align: right;">13</p> <p>1 areas.</p> <p>2 Q We could already tell that you love it.</p> <p>3 A It's fun.</p> <p>4 Q So you went on, you said you got your Ph.D.,</p> <p>5 I see here, in material scientist from University of</p> <p>6 Florida?</p> <p>7 A That is correct.</p> <p>8 Q So can you tell me where you work now?</p> <p>9 A I work for a company call Materials Analytical</p> <p>10 Services.</p> <p>11 Q And we can see the role here. I see you're</p> <p>12 president. Can you tell us a little bit about what</p> <p>13 that is?</p> <p>14 A Well, MAS has a facility in Suwanee, Georgia,</p> <p>15 another suburb outside of Atlanta, and it's a 20,000</p> <p>16 square foot laboratory. And we do everything from</p> <p>17 routine analysis of bulk samples for either asbestos or</p> <p>18 heavy metals or potential organic contaminants, to</p> <p>19 actually working with companies to help solve a</p> <p>20 problem.</p> <p>21 We have a number of scientists in personnel</p> <p>22 that work there. Currently I think our staff is 42</p> <p>23 individuals. We have other material scientists like</p> <p>24 myself. We have organic chemist, inorganic chemist</p> <p>25 geologist, industrial hygienist, certified industrial</p>

<p style="text-align: right;">14</p> <p>1 hygienist, microbiologist, biologist, physicist, 2 microscopists that specialize in both optical 3 microscopy as well as transmission electron microscopy 4 as well as scanning electron microscopy. 5 And we get involved in things that go wrong 6 and why. And literally when we get a project where 7 something has failed and we want to understand why, we 8 have a conference table, we sit the various scientists 9 down and we go what do you think, what do you think, 10 what do you think. Come up with a potential hypothesis 11 and test for it. As well as routine analysis for 12 certifications. 13 Q When did you start that company? 14 A In February of 1988 we opened the door. 15 Q We have down here September. Is that kind of 16 when you started getting it together, did you open the 17 doors in '88? 18 A September is when MAS, our Materials Analytical 19 Service, was incorporated, and then we had to build a 20 lab. 21 Q Fair enough. You need a building, right? 22 Got down here Ph.D., material scientist. 23 I want to talk to you a little bit about 24 professional associations that you're part of. So, 25 last page here. Pretty long here. But the one I</p>	<p style="text-align: right;">16</p> <p>1 American Society For the Testing of Materials. I think 2 sometimes we hear about it as ASTM. Could you tell me 3 what that is? 4 A ASTM, I think they've changed the name to 5 International organization. It is a standards 6 organization in which they probably have the most 7 standards. When I say standards, it's really a recipe 8 for doing any particular type of testing. And you want 9 standards that people follow so that if lab A does an 10 analysis to a particular standard and lab B does the 11 analysis to that same standard, you can look at the 12 results and compare them versus lab B doing a different 13 type of test. But you cannot compare results. 14 So they have thousands and thousands of 15 standards. Everything from the standard for a door on 16 a cabinet on how many times it can be opened and closed 17 before you think there will be a failure of the hinge. 18 They have standards for the strength of concrete. 19 Again, we'll go back to the bridge. The engineer would 20 specify a particular strength of concrete based on an 21 ASTM standard. They have standardized for biomedical 22 testing of medical devices. 23 And in the area that I got involved in was 24 developing a standard, they also do -- they develop 25 standards for the testing of asbestos.</p>
<p style="text-align: right;">15</p> <p>1 wanted to ask you first about is what is this American 2 Industrial Hygiene Association? What is that? 3 A That is a group, sort of a, that is made up of 4 literally industrial hygienists and certified 5 industrial hygienists, as well as other folks who may 6 be interested. So it's an organization that, one, 7 provides the Certification if you want to be an 8 industrial hygienist. They provide an avenue for 9 publishing papers in the industrial hygiene world. 10 They provide an avenue or conference once a year as 11 well as local meetings, and they provide the ability 12 sort of like attorneys where you have to get continuing 13 education points every year. They provide that 14 organization for certified industrial hygienists to get 15 their points every year, to take continuing education 16 courses. 17 And so it has all aspects of industrial 18 hygiene. Not only asbestos, but every other type of 19 industrial problem that may be associated with either 20 exposure or radiation or sound or light, what have you. 21 Q And when we talk about industrial hygiene, 22 that would include asbestos? 23 A Yes. That's one of the sub groups that industrial 24 hygienists would be aware of. 25 Q Now, another one here I wanted to talk about,</p>	<p style="text-align: right;">17</p> <p>1 Q So I'm going to write on here ASTM. And you 2 said that they set standards, right? So what exactly 3 was your role in setting standards for testing? 4 A Well, a particular -- what my role was in a 5 particular committee, it's called the, there's a lot of 6 initials and a lot of numbers in a lot of these things. 7 The D22-05 committee for -- 8 Q You said D22 dash? 9 A 05. 10 Q 05. 11 A So in that committee there was a standard that was 12 proposed to develop a way to measure asbestos in 13 building dust. So that if you had a building that had 14 asbestos in it and you wanted to know was that asbestos 15 being released and contaminating surfaces, the 16 committee wanted to put together a standard for that or 17 recipes on how to collect the sample, how to prepare 18 the sample, how to analyze the sample. And it was by 19 transmission electron microscopy. 20 And this was, and since I had already 21 developed a method, and EPA was going to use that 22 method, I was asked to be the, you know, sort of the 23 committee person that was going to write and shepherd 24 the method through the committee which is, can turn 25 into a very long process.</p>

<p style="text-align: right;">18</p> <p>1 There is probably no other standard other</p> <p>2 than the International Standards Organization,</p> <p>3 standards that go through that much scrutiny. It took</p> <p>4 almost six years to get that standard from start to</p> <p>5 finish to be approved, since any committee member can</p> <p>6 vote negative and you have to address that negative and</p> <p>7 go back. And if you have 125 scientists as well as</p> <p>8 industry members on your committee, it's like herding</p> <p>9 cats to get everybody to agree.</p> <p>10 I did that one and I swore I would never do</p> <p>11 another one after six years.</p> <p>12 Q That's fair.</p> <p>13 You mentioned EPA standards. Have you ever</p> <p>14 worked on EPA committees?</p> <p>15 A I have.</p> <p>16 Q Can you tell me a little bit about that?</p> <p>17 A One committee I was on for a while until the EPA</p> <p>18 ran out of funding was the peer-review group, and that</p> <p>19 was made up of four scientists from around the country</p> <p>20 and I was asked to participate in that. And we would</p> <p>21 meet twice a year in Cincinnati at the headquarters of</p> <p>22 EPA for this area, and we would make recommendations</p> <p>23 for areas involving asbestos that they needed to</p> <p>24 address.</p> <p>25 We would also look over the testing that EPA</p>	<p style="text-align: right;">20</p> <p>1 Q Can you tell me a little bit about that?</p> <p>2 A We have consulted for the General Services</p> <p>3 Administration, GSA, on some asbestos issues they had</p> <p>4 with bulk samples; post office, the same way. We have</p> <p>5 consulted with the FAA on both asbestos issues and</p> <p>6 their radar stations that go across the country where</p> <p>7 they can hand one plane off from one station to another</p> <p>8 as they travel. They had asbestos issues in some of</p> <p>9 those buildings.</p> <p>10 As well as doing work for them to determine</p> <p>11 if a plane crash site, if there is a fire, because of</p> <p>12 the exotic materials that make up planes, the FAA</p> <p>13 wanted to know if first responders, what they may be</p> <p>14 exposed to and would they need respirators. So we</p> <p>15 actually had airplane parts that were ignited in jet</p> <p>16 fuel at our facility and then taken in and measured</p> <p>17 particulates, any type of gas that is released, and I</p> <p>18 think we're getting ready to do another one of those.</p> <p>19 We have done work for the Center of Disease</p> <p>20 Control. We have worked for, had a contract with</p> <p>21 the -- with the -- trying to think of the name now.</p> <p>22 For the public health in looking at particular types of</p> <p>23 situations involving the transmittal of AIDS virus, as</p> <p>24 well as doing contracts for looking at the microvilli</p> <p>25 in intestines for the supplement drinks, can they</p>
<p style="text-align: right;">19</p> <p>1 was having done via peer-review group for -- since they</p> <p>2 were mostly using outside contracts to do their</p> <p>3 testing, and we would also propose new areas. And I</p> <p>4 did that for a number of years.</p> <p>5 I was also on their Blue Ribbon panel for</p> <p>6 electron microscopists, optical microscopists, to help</p> <p>7 them develop a dust method for analyzing asbestos in</p> <p>8 dust samples from buildings, but then that got kicked</p> <p>9 to ASTM so that's how I got that job at ASTM because I</p> <p>10 was writing the one for EPA with the other scientist.</p> <p>11 Q Okay. So you were working, too, and that one</p> <p>12 ends up getting kicked?</p> <p>13 A Well, they decided to make it an ASTM standard</p> <p>14 instead of an EPA standard so that it could be more</p> <p>15 wildly used. And ASTM does a much better job in</p> <p>16 putting those types of standards together, in my</p> <p>17 opinion, than EPA.</p> <p>18 Q So basically you got kicked from this</p> <p>19 committee back and that got kicked back to your ASTM</p> <p>20 group?</p> <p>21 A I think it would have been easier getting it</p> <p>22 through the EPA than ASTM.</p> <p>23 Q So have you ever consulted for the government</p> <p>24 before besides the EPA that we've already mentioned?</p> <p>25 A I have.</p>	<p style="text-align: right;">21</p> <p>1 expand the villi in there so it can get more nutrients.</p> <p>2 So we've done some interesting stuff in the past.</p> <p>3 Q You worked for NASA before?</p> <p>4 A We did one project for NASA where it was an X-ray</p> <p>5 telescope they were getting ready to launch and they</p> <p>6 needed some very precise holes drilled into some of the</p> <p>7 chips. When I say very precise holes I'm talking in</p> <p>8 micrometer in size. And they wouldn't tell us why.</p> <p>9 And we had this, we have these focused ion beams when</p> <p>10 we had our Raleigh lab that could actually drill very</p> <p>11 precise holes through different types of materials.</p> <p>12 Q I just lost my Elmo.</p> <p>13 MR. LINDER: My fault, your Honor. I kicked</p> <p>14 the cord. My apologies. I think we're plugged back in</p> <p>15 now.</p> <p>16 BY MS. COOPER:</p> <p>17 Q Dr. Longo, while he's doing that, have you</p> <p>18 also done some publications and presentations before?</p> <p>19 A I have.</p> <p>20 Q What kind of topics do you usually present?</p> <p>21 A Everything from my research work at the University</p> <p>22 of Florida when I got my Ph.D. involving drug</p> <p>23 targeting, developing the synthesis of a vehicle that</p> <p>24 could take a payload of cancer drug that could be</p> <p>25 injected into the tumor; to what I'm primarily, my</p>

<p style="text-align: right;">22</p> <p>1 research area is asbestos or exposure. So a number of</p> <p>2 different topics.</p> <p>3 Q Same thing on lectures and courses; you've</p> <p>4 done that before as well?</p> <p>5 A I have. I've taught at the American Industrial</p> <p>6 Hygiene Society on teaching certified industrial</p> <p>7 hygienists. And they're continuing education courses</p> <p>8 about using electron microscopy to solve industrial</p> <p>9 hygiene problems. I have taught at Georgia Tech, same</p> <p>10 situation. I've taught at the Southern New York</p> <p>11 University, week-long course on how to use transmission</p> <p>12 electron microscopy for asbestos back in the early</p> <p>13 '90s. And given presentations and lectures to various</p> <p>14 groups over the years.</p> <p>15 Q How about patents, do you have any patents?</p> <p>16 A I have two patents from the research work</p> <p>17 developing protein microspheres, the synthesis for drug</p> <p>18 delivery. And both those patents were while I was at</p> <p>19 University of Florida.</p> <p>20 Q I'm going to write that down if we ever get</p> <p>21 the Elmo back. Ercilyn, is there any way -- I hit on.</p> <p>22 Perfect. Thank you so much.</p> <p>23 All right. So we have you have patents. I'm</p> <p>24 sorry. Okay. So I want to talk a little bit more</p> <p>25 about your consulting work. If someone said that you</p>	<p style="text-align: right;">24</p> <p>1 A Scotts fertilizer still makes a product called</p> <p>2 Turf Builder, and Turf Builder is designed to be a</p> <p>3 fertilizer that you can put on your lawn, and it has a</p> <p>4 slow time release of the nutrients so you only have to</p> <p>5 do it every three months or six months.</p> <p>6 Back starting in approximately the 1960s they</p> <p>7 were using a carrier, when I say carrier it's, this</p> <p>8 happened to be a mineral they could put the fertilizer</p> <p>9 on so it could be spread. In this particular case they</p> <p>10 were using Libby, Montana vermiculite. And then they</p> <p>11 would coat these particles in a long laborious process</p> <p>12 with a polymer, a urethane formaldehyde polymer that</p> <p>13 once it got into the ground, the microbes, the bacteria</p> <p>14 would start feasting on it and releasing nitrogen, or</p> <p>15 they could put some other nutrients in. And it took</p> <p>16 some time for that polymer to completely degrade.</p> <p>17 So as it turned out they were told by the</p> <p>18 company that sold them the vermiculite that Libby,</p> <p>19 Montana vermiculite, it was contaminated or had high</p> <p>20 concentrations of tremolite asbestos in it. So Scotts</p> <p>21 was trying to figure out just how high the</p> <p>22 concentration was and they relied on companies to do</p> <p>23 testing.</p> <p>24 In fact, W.R. Grace tested their product and</p> <p>25 found out that they, after all the processing, the</p>
<p style="text-align: right;">23</p> <p>1 got \$30 million from plaintiffs' attorneys is that</p> <p>2 true?</p> <p>3 A Not me personally. No.</p> <p>4 Q Okay. Could you tell me if --</p> <p>5 A If that was true my wife would be very happy.</p> <p>6 Q Right.</p> <p>7 A Over 30 years our company has billed about a</p> <p>8 million dollars a year on average, some years higher,</p> <p>9 some years lower in my work involved with plaintiffs'</p> <p>10 attorneys. That is a true statement.</p> <p>11 Q Do you only consult for plaintiffs'</p> <p>12 attorneys?</p> <p>13 A No. We also do work for defendants doing the same</p> <p>14 sort of thing in asbestos cases.</p> <p>15 Q Okay. Can you tell me a little bit about</p> <p>16 what kind of defendants you've worked for before?</p> <p>17 A We've done a lot of work for Westinghouse or</p> <p>18 General Electric, for Carborundum, for American</p> <p>19 Insulated Wire, Continental Wire, Rockbestos wire,</p> <p>20 Eutectic company. We've done work for Tremco and even</p> <p>21 lawnmower engines.</p> <p>22 Q Have you ever worked for a company called</p> <p>23 Scotts?</p> <p>24 A And Scotts was another client. Yes.</p> <p>25 Q Can you tell me a little bit about that?</p>	<p style="text-align: right;">25</p> <p>1 amount of asbestos in the vermiculite was reduced</p> <p>2 pretty substantially. And Grace was trying to figure</p> <p>3 out how to do it.</p> <p>4 So I got hired when they were suing, in</p> <p>5 lawsuits to see if you're starting with vermiculite</p> <p>6 that has a fair amount of contamination of tremolite in</p> <p>7 it, then you have a product that you processed and</p> <p>8 coated, encapsulated, how much weight initially was in</p> <p>9 the -- of tremolite was in the vermiculite, then how</p> <p>10 much was after they went through the process. And</p> <p>11 that's what we were asked to do is make that comparison</p> <p>12 for Scotts.</p> <p>13 Q Okay. I want to focus a little bit more on</p> <p>14 MAS, your company.</p> <p>15 MS. COOPER: Your Honor, at this time</p> <p>16 plaintiff is going to offer, for demonstrative</p> <p>17 purposes, Plaintiff's 16 -- I'm sorry, 160.2.</p> <p>18 Tendering to defense counsel for examination.</p> <p>19 MR. DUBIN: Examination of the photo, you</p> <p>20 mean?</p> <p>21 MS. COOPER: Sorry. Yes. Examination and</p> <p>22 offering for demonstrative opinions.</p> <p>23 MR. DUBIN: I have no objection to the</p> <p>24 photographs being used. I'll wait to voir dire.</p> <p>25 THE COURT: Sure. Continue.</p>

<p style="text-align: right;">26</p> <p>1 BY MS. COOPER:</p> <p>2 Q All right. What is this?</p> <p>3 A That's our building at MAS. That's the front</p> <p>4 entrance.</p> <p>5 Q And can you tell me how many people work at</p> <p>6 MAS?</p> <p>7 A Currently I believe it's 41.</p> <p>8 Q And you mentioned the different specialties.</p> <p>9 When we talk about -- first of all, does MAS charge for</p> <p>10 the time that -- for you to be here?</p> <p>11 A It does.</p> <p>12 Q Can you tell me a little bit about that?</p> <p>13 A My billing rate for everything I do is \$550 an</p> <p>14 hour.</p> <p>15 Q Where does that money go?</p> <p>16 A It goes to MAS and then my billing, any other</p> <p>17 consultants' billing, our analysis, any testing we do</p> <p>18 goes to the company to keep the company running. Every</p> <p>19 two weeks we're expected to give the employees</p> <p>20 paychecks where you have to have health insurance and</p> <p>21 insurance on the building, electricity on, to pay the</p> <p>22 taxes, the supplies.</p> <p>23 So it's, the company is a for-profit company.</p> <p>24 We don't apologize for that. And in order to keep it</p> <p>25 running we have to bill for our time and be able to</p>	<p style="text-align: right;">28</p> <p>1 polarized light microscopy, or PLM, transmission</p> <p>2 electron microscopy by the -- essentially it's the</p> <p>3 Federal Government, but it's called the National</p> <p>4 Voluntary Laboratory Accreditation Program.</p> <p>5 We're certified by the AIHA, or the American</p> <p>6 Industrial Hygiene Association, for using, analyzing</p> <p>7 fibers or asbestos fibers by another optimal microscopy</p> <p>8 technique called phase contrast microscopy, or PCM, as</p> <p>9 well as a host of other inorganics, you know, metals</p> <p>10 and analysis and organic analysis, even airborne spore</p> <p>11 analysis or mold.</p> <p>12 We're certified by the International</p> <p>13 Standards Organization for some specialty testing that</p> <p>14 we do, and we're also certified by the International</p> <p>15 Standards Organization to certify other folks who are</p> <p>16 doing tests, a certain type of testing. And we also</p> <p>17 are a registered lab for the FDA.</p> <p>18 Q Can you estimate for MAS how many products</p> <p>19 you've tested?</p> <p>20 A If we just keep it just to asbestos products or</p> <p>21 asbestos samples, just the sheer number of samples that</p> <p>22 have come into our laboratory since opening the door in</p> <p>23 February of 1988, I would estimate we're probably</p> <p>24 getting close to 400,000 individual samples.</p> <p>25 Q You said 400 --</p>
<p style="text-align: right;">27</p> <p>1 keep ahead of the expenses just like any normal</p> <p>2 company.</p> <p>3 Q I'm sorry to go back to this. So we talked a</p> <p>4 little bit about, you said it was 30 years, so that was</p> <p>5 30 million in 30 years?</p> <p>6 A I think that's the average on plaintiffs'</p> <p>7 attorneys and all the testing that we did over the</p> <p>8 years, especially for the product identification.</p> <p>9 Q Do you know how much you've charged asbestos</p> <p>10 defendants for your work?</p> <p>11 A We're averaging about a million dollars a year on</p> <p>12 behalf of defendants.</p> <p>13 Q So do you know how much, I guess, recently?</p> <p>14 A I guess, I would estimate over the last ten years,</p> <p>15 about the same we charged for plaintiffs. \$10 million.</p> <p>16 Q \$10 million?</p> <p>17 A Over ten years. We average about a million</p> <p>18 dollars a year for them.</p> <p>19 Q You said that was for defendants. Was that</p> <p>20 in asbestos?</p> <p>21 A It's primarily asbestos.</p> <p>22 Q Now, does MAS have any accreditations?</p> <p>23 A We do.</p> <p>24 Q Can you tell me a little bit about that?</p> <p>25 A We're accredited for asbestos analysis by</p>	<p style="text-align: right;">29</p> <p>1 A Thousand. Of all types of samples.</p> <p>2 Q Have you published on that fore?</p> <p>3 A I have. On asbestos.</p> <p>4 Q And to be clear about why you're here today,</p> <p>5 are you a geologist?</p> <p>6 A I am not a geologist.</p> <p>7 Q Are you a mineralogist?</p> <p>8 A I don't have a degree in mineralogy, but I have to</p> <p>9 understand it quite a bit to make positive</p> <p>10 identification of asbestos in the samples we test. But</p> <p>11 I didn't get a degree in mineralogy.</p> <p>12 Q Are you a medical doctor?</p> <p>13 A I am not. I am still not a medical doctor.</p> <p>14 Q Are you an epidemiologist?</p> <p>15 A No, I'm not.</p> <p>16 Q But are you a material scientist?</p> <p>17 A I would say I'm a material scientist that has</p> <p>18 specialized for the last 30 years in the</p> <p>19 characterization, and that's my area of research at the</p> <p>20 company, the characterization of samples for asbestos,</p> <p>21 and those samples can cover bulk samples that we call</p> <p>22 them, like talcum powder, water samples, air samples,</p> <p>23 every type of bulk sample that you can think of, as</p> <p>24 well as human tissue samples for what we call fiber</p> <p>25 burden analysis.</p>

<p style="text-align: right;">30</p> <p>1 Q And you said you've tested Johnson &</p> <p>2 Johnson's product before. Was that for asbestos</p> <p>3 content and exposure?</p> <p>4 A Yes.</p> <p>5 Q And have you reviewed and considered Johnson</p> <p>6 & Johnson internal records when you were looking at or</p> <p>7 forming your opinions?</p> <p>8 A Yes, I have.</p> <p>9 Q And are you prepared to tell us your</p> <p>10 conclusions based on your experience as a material</p> <p>11 scientist and testing of asbestos and assessment of</p> <p>12 asbestos exposure specifically?</p> <p>13 A Yes, I am.</p> <p>14 MS. COOPER: Your Honor, at this time we'd</p> <p>15 like to offer Dr. Longo as an expert in material</p> <p>16 scientist, testing for asbestos, and assessment of</p> <p>17 asbestos exposure.</p> <p>18 MR. DUBIN: I'd like to voir dire, please.</p> <p>19 THE COURT: Okay. One more time on the areas</p> <p>20 of qualification you're seeking.</p> <p>21 MS. COOPER: Yes, your Honor. Material</p> <p>22 science, testing of asbestos, and assessment of</p> <p>23 asbestos exposure.</p> <p>24 THE COURT: Thank you. You may proceed on</p> <p>25 voir dire.</p>	<p style="text-align: right;">32</p> <p>1 besides us, and hopefully the record. That's the</p> <p>2 important part.</p> <p>3 MS. COOPER: Thank you. I just want to make</p> <p>4 sure we're staying within the scope of qualifications</p> <p>5 and not going outside the scope into cross-examination</p> <p>6 as far as qualifying the expert, specifically talking</p> <p>7 about plaintiffs' lawyers versus defense lawyers.</p> <p>8 MR. DUBIN: There was extensive discussion in</p> <p>9 your voir dire about his work for plaintiffs' lawyers,</p> <p>10 his work for defense lawyers, how much he's made, what</p> <p>11 he's done within litigation. I'm within the scope of</p> <p>12 what you said.</p> <p>13 THE COURT: Agreed. You may continue.</p> <p>14 MR. DUBIN: Thank you.</p> <p>15 (Sidebar ends.)</p> <p>16 BY MR. DUBIN:</p> <p>17 Q Thank you. Can we return back to the screen?</p> <p>18 Dr. Longo, can you verify that the statement</p> <p>19 I made in opening in this case that you have never</p> <p>20 tested cosmetic talc when you weren't being paid to do</p> <p>21 it by plaintiffs' lawyers is correct?</p> <p>22 A That is correct.</p> <p>23 Q And more than that, I think you've agreed</p> <p>24 that the only time you've tested talcum powder is for</p> <p>25 plaintiffs' lawyers suing for money in litigation,</p>
<p style="text-align: right;">31</p> <p>1 VOIR DIRE BY MR. DUBIN:</p> <p>2 Q Hi, Dr. Longo. How are you?</p> <p>3 A Fine. Good morning.</p> <p>4 Q Just so the jury understands what's going on</p> <p>5 right now, I'm going to ask you some questions about</p> <p>6 the qualifications that Miss Cooper discussed with you</p> <p>7 and then probably disappear for a while before I come</p> <p>8 back and talk to you about the substance of your</p> <p>9 opinions.</p> <p>10 A Yes, sir. I understand.</p> <p>11 Q Thank you.</p> <p>12 You talked a little bit about work that you</p> <p>13 have done in the past and if we can just put up slide</p> <p>14 1, I want to verify this. I used this in opening</p> <p>15 statement. I'm sorry. Can we switch to defense?</p> <p>16 This is true, is it not; that you, Dr. Longo,</p> <p>17 have never tested cosmetic talc when you were not being</p> <p>18 paid to do it by plaintiffs' lawyers?</p> <p>19 MS. COOPER: Objection, your Honor. May we</p> <p>20 approach?</p> <p>21 THE COURT: Sure.</p> <p>22 (Sidebar.)</p> <p>23 MS. COOPER: Your Honor, my objection is --</p> <p>24 THE COURT: You need to speak a little bit</p> <p>25 louder. Don't worry about it, no one can hear you</p>	<p style="text-align: right;">33</p> <p>1 right?</p> <p>2 A That is correct. I've been working on behalf of</p> <p>3 plaintiffs in this area.</p> <p>4 Q And none of, for example, you talked about</p> <p>5 work for NASA. None of that involved testing for</p> <p>6 cosmetic talc, right?</p> <p>7 A That is correct.</p> <p>8 Q And Miss Cooper asked you a lot about money,</p> <p>9 so I want to talk a little bit about that same history</p> <p>10 and flesh it out a little bit more. You mentioned that</p> <p>11 you're president and owner of MAS, right?</p> <p>12 A Yes, sir.</p> <p>13 Q You own about 75 percent of that company?</p> <p>14 A That is correct.</p> <p>15 Q And you said you opened the doors of MAS, I</p> <p>16 think you've said before, in about February of 1988,</p> <p>17 right?</p> <p>18 A Yes, sir.</p> <p>19 Q And soon after opening the doors of MAS you</p> <p>20 ran an ad, which I know you've seen before and expect</p> <p>21 to see again today, right?</p> <p>22 A Yes, sir. Probably for the rest of my career.</p> <p>23 Q Okay. So let's look at it. I showed it in</p> <p>24 opening. It's slide 2. Made it a little easier to</p> <p>25 see.</p>

<p style="text-align: right;">34</p> <p>1 This is an ad that you ran in about 1989, 2 correct? 3 A Yes, sir. It was either 1989 or 1990. 4 Q And you chose to picture yourself in the 5 advertisement in a courtroom, right? 6 A That is correct. 7 Q You obviously could have, instead, taken a 8 picture of yourself -- and that's Mr. George Yamati 9 with you, right? 10 A It is. 11 Q You could have taken a picture instead in, 12 for example, a laboratory, right? 13 A In hindsight, that might have been a good idea. 14 Q And the ad was taken out in a magazine called 15 The National Asbestos Council, right? 16 A Yes, sir. 17 Q And Miss Cooper mentioned if someone were to 18 say that you made 30 million personally, I just want to 19 show what I actually did say in opening and see whether 20 you agree that that was correct. And if we could look 21 at slide 3. That's what I said in opening statement. 22 I think you confirmed that today, right; that MAS has 23 made about \$30 million working for plaintiffs' 24 attorneys in litigation, right? 25 A MAS has billed \$30 million.</p>	<p style="text-align: right;">36</p> <p>1 work that you've done as a consultant and an expert in 2 asbestos litigation has basically been what has allowed 3 your lab, MAS, to survive? 4 A Being a for-profit company and making a profit has 5 allowed us to survive, yes, sir. 6 Q You would agree that working as a consultant 7 in asbestos litigation has basically been what has 8 allowed your lab to survive, correct? 9 A Yes, sir. All of the above. 10 Q All of the above. I just want an answer to 11 my specific question, sir. Working as a consultant and 12 an expert in asbestos litigation has basically been 13 what has allowed your lab to survive, correct? 14 A I would say that's correct. 15 Q Thank you. 16 One of the things you mentioned before is 17 you've got to keep the lights on, right? 18 A We do. 19 Q And you have not published any papers related 20 to talc, correct? 21 A That is correct. 22 Q You've never visited any of the cosmetic talc 23 mines at issue in this case, correct? 24 A No. I haven't. 25 Q And you, yourself, did not actually do much</p>
<p style="text-align: right;">35</p> <p>1 Q Billed. Okay. 2 A Never made \$30 million. 3 Q And you've been testifying in asbestos 4 litigation back not too long, since not too long after 5 that ad ran back in the late 1980s, right? 6 A I think '91 or '92 was some of the first cases. 7 Q Since that ad ran you've given about 2500 to 8 3,000 depositions, right? 9 A That is correct. 10 Q I think you've said that you testify at least 11 once a week every week for about the last five years, 12 right? 13 A Yes, sir. 14 Q More recently you're averaging about one to 15 two depositions a week? 16 A That is correct. 17 Q 95 percent of the time or more that you're in 18 court it's for plaintiffs' attorneys in asbestos 19 litigation, right? 20 A That is correct. 21 Q And when it comes to talc litigation, 100 22 percent of your work is on behalf of plaintiffs' 23 attorneys, right? 24 A That is correct. 25 Q And I think you would agree with me that the</p>	<p style="text-align: right;">37</p> <p>1 of the microscopy that goes into the reports that 2 you're going to be discussing today, right? 3 A From start to finish of a particular analysis, 4 that's correct. 5 Q However, I think, to be fair, you've said 6 that before you put your name on a report or you author 7 it, you're intimately involved with the details of the 8 analysis and the scientists at MAS to ensure the 9 accuracy and reliability of that report, correct? 10 A That is correct. 11 Q Okay. And you are not here to talk about the 12 medical cause of Mr. Rimondi's mesothelioma, correct? 13 A I am not. 14 MR. DUBIN: And with that, your Honor, we 15 wouldn't object to him being qualified as a material 16 scientist for purposes of testing the products that he 17 has looked at, the Johnson & Johnson products he's 18 going to be talking about today, so we don't object to 19 that. 20 THE COURT: Are you objecting to any of the 21 other areas that he's been proposed? 22 BY MR. DUBIN: 23 Q Well, let's be clear: When you talk about 24 being, you're talking about exposure assessments, you 25 are not a certified industrial hygienist, right?</p>

<p style="text-align: right;">38</p> <p>1 A No, I'm not.</p> <p>2 MR. DUBIN: Your Honor, I'll say fine on all</p> <p>3 of them, just to make it easier.</p> <p>4 THE COURT: Thank you.</p> <p>5 Members of the jury, Dr. Longo has now been</p> <p>6 qualified as an expert in the fields of material</p> <p>7 scientist -- material science, testing of asbestos and</p> <p>8 assessment of asbestos exposures.</p> <p>9 You may proceed, counsel.</p> <p>10 MS. COOPER: Thank you, your Honor.</p> <p>11 BY MS. COOPER:</p> <p>12 Q Dr. Longo, if I can get the Elmo again.</p> <p>13 Thank you.</p> <p>14 It's clear you're not here to talk about</p> <p>15 medical causation, right?</p> <p>16 A No. It's not my area. I don't testify about</p> <p>17 that.</p> <p>18 Q You're not a one-size-fits-all expert?</p> <p>19 A No, I'm not.</p> <p>20 Q And we have you here to discuss your</p> <p>21 expertise, and again remind us what that is.</p> <p>22 A My expertise is in the area of analyzing samples</p> <p>23 and determining what essentially the ingredients are,</p> <p>24 how was the sample made up, what are the different</p> <p>25 components, what is the percentages, and also I do, I'm</p>	<p style="text-align: right;">40</p> <p>1 So we do the exact same thing for both sides.</p> <p>2 If they want to come and have us do the analysis and we</p> <p>3 do it, we'll provide a report, same as we do for</p> <p>4 plaintiffs.</p> <p>5 Q I want to ask you about the ad. I can't seem</p> <p>6 to find my copy of it right now, but Mr. Dubin put up</p> <p>7 part of that ad. What's in the rest of that ad?</p> <p>8 A The bottom of the ad actually talks on what the ad</p> <p>9 was about. The ad was about that George Yamati was</p> <p>10 part of our -- part of our group and he was the actual,</p> <p>11 if you'll probably hear later about what's known as the</p> <p>12 EPA levels of analysis by TEMs 1, 2 and 3, and it's</p> <p>13 also known as the Yamati method.</p> <p>14 Essentially, one of the first TEM analysis</p> <p>15 that was published, it's still a draft, and we were</p> <p>16 discussing about how good our lab is, or we call it</p> <p>17 final air clearance. That is if somebody takes an air</p> <p>18 sample in a school, after the asbestos has been</p> <p>19 removed, you have to certify that that air is clean</p> <p>20 enough for kids to go back in there. So it's final air</p> <p>21 clearance.</p> <p>22 And there was a lot of competition out there,</p> <p>23 and we wanted to have a stand-alone that not only were</p> <p>24 we one of the best in the country at doing this, but if</p> <p>25 our data is ever called into question, we'll go and</p>
<p style="text-align: right;">39</p> <p>1 not a certified industrial hygienist, but I consider</p> <p>2 myself an industrial hygienist just in the area of</p> <p>3 asbestos and how our results relate to any potential</p> <p>4 exposure and characterization of it.</p> <p>5 Quite simply, I'm a measurement guy, electron</p> <p>6 microscopist, specialist to analyze samples for the</p> <p>7 content of how much asbestos is present, that's there.</p> <p>8 Q Okay. Mr. Dubin just asked you about the</p> <p>9 fact that you've never tested cosmetic talc when you're</p> <p>10 not paid by plaintiffs' lawyers, but if J&J or other</p> <p>11 talc companies asked you to, would you?</p> <p>12 A Yes, we would. Absolutely.</p> <p>13 Q And have they ever asked you to testify?</p> <p>14 A They have never, none -- they have not called or</p> <p>15 asked for us to do any testing of their cosmetic talc</p> <p>16 samples.</p> <p>17 Q But have other asbestos companies hired you</p> <p>18 to test their products?</p> <p>19 A They have. We have done that quite a bit, where</p> <p>20 we actually test the product and these defense</p> <p>21 companies have asked us to actually do a, what we call</p> <p>22 a work practice study or a hygiene study. We have a</p> <p>23 specially built room where we can use these products</p> <p>24 just like they used to use them in the field to see if</p> <p>25 there's measurable exposure or not.</p>	<p style="text-align: right;">41</p> <p>1 defend it in this setting. This is what the courtroom</p> <p>2 is about.</p> <p>3 MS. COOPER: Your Honor, at this time</p> <p>4 plaintiffs offer, for demonstrative purposes, 161.12.</p> <p>5 It's been tendered to defense counsel.</p> <p>6 MR. DUBIN: No objection for that purpose.</p> <p>7 BY MS. COOPER:</p> <p>8 Q So this is the part that we've seen already,</p> <p>9 right?</p> <p>10 A I think we've seen a little bit higher.</p> <p>11 Q Little bit higher. So right here.</p> <p>12 A Right there.</p> <p>13 Q And then you said at the bottom, we're</p> <p>14 actually talking about what the ad is about, and you</p> <p>15 talked about final air clearance testing by TEM. Is</p> <p>16 that what you just discussed?</p> <p>17 A Yes. It was never designed for attorneys to call</p> <p>18 me. It was actually -- it was about our ability. We</p> <p>19 still feel we're one of the best labs in the country.</p> <p>20 So we wanted to separate us out for, and you'll see in</p> <p>21 the bottom on the other side the final clearance lab.</p> <p>22 Q Is that right here?</p> <p>23 A Correct. There's nothing about being an expert in</p> <p>24 litigation in that.</p> <p>25 Q Let's get back to Johnson & Johnson Baby</p>

<p style="text-align: right;">42</p> <p>1 Powder. I want to ask you the same two questions we 2 actually asked Dr. Blount, which is have you tested 3 Johnson & Johnson talcum powder? 4 A We have. 5 Q And what -- and have you found asbestos in 6 Johnson & Johnson talcum powder? 7 A We have. 8 Q Let's get down our road here. Talked about 9 you, asbestos microscopist. I want to talk about 10 testing 101. We've heard a lot of different terms and 11 I want to make sure we're keeping them straight. Okay? 12 So first of all, I don't know about everybody 13 else, but I have not probably been around a microscope 14 or worked with a microscope since probably high school. 15 So I want to talk about first what are the different 16 kinds of microscopes that we've encountered in this 17 case. The first one is the XRD. What does that even 18 mean? 19 A Well, it means X-ray diffraction. And it's not a 20 microscope. 21 Q Okay. See, I told you. Not even since high 22 school. 23 A The definition of a microscope would be that you 24 can take something and magnify it so that you can 25 increase your ability to see smaller and smaller</p>	<p style="text-align: right;">44</p> <p>1 its geometrical shape. A geode, most everybody has 2 seen a geode. That's an actual crystal habit. Forms a 3 geode where you cut it open and the crystals are mostly 4 inside. Crystals also form fibers, that is a 5 crystalline habit, and some people will say that's 6 asbestiform, but typically it's fibrous like asbestos. 7 It can't tell you any of that. Alls it can tell you is 8 it's a mineral. 9 Second problem is it's not very sensitive. 10 Q Okay. 11 A It has detection issues. 12 Q What's its sensitivity? 13 A Well, today, new state-of-the-art XRDs for 14 tremolite series, asbestos solid solution series, you 15 should be able to get down to .1 percent. If you have 16 a very good analyst and the sample preparation is okay. 17 Q Down to .1 percent? 18 A For tremolite. 19 Q To me, that sounds pretty small. Is that 20 pretty small in the grand scheme of things, though? 21 A Well, pretty small really doesn't have a 22 definition. No. To me, that's very high. .1 percent 23 would be at a level where you have millions of asbestos 24 fibers or tremolite fibers in the samples that you're 25 looking at, millions and millions.</p>
<p style="text-align: right;">43</p> <p>1 things. The XRD doesn't magnify it. It uses X-rays, 2 the same way that X-rays are generated if you're going 3 to have an X-ray or broke a bone in your hand. And 4 those X-rays, when they hit a mineral, due to the 5 crystalline structure of the mineral, you get an angle 6 of reflection diffraction, and those angles can be very 7 specific for a type of mineral. 8 So it's a tool that can be used to identify 9 minerals. It has -- all these tools have advantages 10 and disadvantages. The XRD's advantages, it can look 11 at fairly sizeable samples. 12 Q When you say, "sizeable samples," I mean, 13 what are we talking about? 14 A We're talking two or three grams of material to 15 make the sample. So you can cover a large area as we 16 get to the microscopy techniques. And that's its 17 advantage. And its advantage is it can positively 18 identify certain types of minerals, specifically 19 asbestos, depending on the other stuff that may be 20 there that doesn't interfere with that analysis. 21 That's its advantages. 22 The disadvantages are, one, it can't tell 23 you, and you'll hear a lot of this, if the minerals, 24 the crystalline habit of the mineral. And crystalline 25 habit means that when the mineral was formed, what's</p>	<p style="text-align: right;">45</p> <p>1 Q So even at .1 percent you're talking about 2 millions of fibers still? 3 A Fibers and bundles for tremolite. Anthophyllite 4 is higher because of the talc issue associated with it. 5 It interferes. Some people say you can't get less than 6 one percent. I would say today you might be able to 7 get .5 to .3 percent anthophyllite with the state of 8 the art system. 9 Q Can you define to us, when we talk about 10 level of detection, what is level of detection? 11 A Level of detection is how much has to be in the 12 sample so you can literally detect it. If you don't 13 find asbestos in a sample you can say it is below my 14 level of detection. Can't say it's not there. Can't 15 say it's there. It's just below the level of detection 16 like all analytical protocols. 17 So you have to have a certain amount in the 18 talc before you can see it. So when I say level of 19 detection is .1 percent for tremolite, if you had .02 20 percent, even though that still will account for 21 millions of fibers, .02 percent, you won't be able to 22 detect it by XRD unless you do something to the sample 23 prep to concentrate it. Even though you may have a lot 24 in there, you can't detect it. 25 So that method has, what I would call,</p>

<p style="text-align: right;">46</p> <p>1 detection issues for asbestos.</p> <p>2 MS. COOPER: And, your Honor, for</p> <p>3 demonstrative purposes, plaintiffs offer 161.6, 161.5.</p> <p>4 This is 160.1 and 263.</p> <p>5 MR. DUBIN: 160.1, 161.5, 161.6 and 2 what 3?</p> <p>6 243?</p> <p>7 MS. COOPER: 263.</p> <p>8 MR. DUBIN: 263. I don't have any objections</p> <p>9 to those being used for demonstrative purposes.</p> <p>10 THE COURT: Continue.</p> <p>11 MS. COOPER: Thank you, your Honor.</p> <p>12 BY MS. COOPER:</p> <p>13 Q So is this, when we talk about an XRD</p> <p>14 machine, is that what we're talking about?</p> <p>15 A Yes. That's XRD. And if you go right in right</p> <p>16 about the middle of that or down below is where the</p> <p>17 sample goes, and the machine will generate X-rays, you</p> <p>18 know, using anodes and cathodes and electron beams to</p> <p>19 generate the X-rays. Then it penetrates the sample.</p> <p>20 And then on to the right you have what looks</p> <p>21 like it's hanging off the side, that's the detector</p> <p>22 that then goes through all the different degrees for</p> <p>23 the angle and you get a spectrograph, and then you</p> <p>24 interpret the results.</p> <p>25 Q Okay. The next thing that we are or the next</p>	<p style="text-align: right;">48</p> <p>1 because you're using an optical microscope, you go up</p> <p>2 to 400 times, you can see the chunks or little pieces</p> <p>3 of rock or is it fibrous, is it a bundle.</p> <p>4 It was primarily designed for commercially</p> <p>5 added asbestos products where you're dealing with what</p> <p>6 I call very high percentages of asbestos, .5, one, ten,</p> <p>7 20, 50 percent, even 100 percent.</p> <p>8 The issues with it is it also has detection</p> <p>9 limit issues. And depending on how much time you're</p> <p>10 willing to take with the sample, it's initially a</p> <p>11 typical PLM microscope in a laboratory where somebody</p> <p>12 does this routinely, they may spend ten minutes on the</p> <p>13 sample. And detection limit is usually about .2 to .3</p> <p>14 to .5, depending on the sample, maybe .1.</p> <p>15 So it's better than the XRD, but it is not as</p> <p>16 good for really low detection limits as the TEM, unless</p> <p>17 you're willing to do the extra that's needed to analyze</p> <p>18 samples by PLM to increase the detection limit.</p> <p>19 Q We're definitely going to be talking about</p> <p>20 that. Before we do, looking at -- 161.5. Is that a</p> <p>21 PLM microscope?</p> <p>22 A No. That's actually a polarized light -- PCM, but</p> <p>23 it's using the same principle.</p> <p>24 Q Okay. What about looking at 60 -- I'm sorry,</p> <p>25 160.1. Can you tell us what this is?</p>
<p style="text-align: right;">47</p> <p>1 kind of technology we've heard about is PLM. Can you</p> <p>2 tell us, what is PLM?</p> <p>3 A PLM is polarized light microscopy, and it's an</p> <p>4 optical microscope that has been modified a little bit</p> <p>5 that it has two polarizing lenses in it. One below the</p> <p>6 sample and one above. One's called the polarizer and</p> <p>7 one's called the analyzer.</p> <p>8 And these polarizing lens can turn and cause</p> <p>9 the light to be essentially put in one direction, the</p> <p>10 wavelength of light or the vibration in one direction</p> <p>11 or another. When you buy sunglasses that says that or</p> <p>12 polarized, it has one polarized lens that eliminates a</p> <p>13 lot of the light coming in that scatters normally,</p> <p>14 going in -- these wavelengths are going in many</p> <p>15 different directions and makes it all go in one</p> <p>16 direction.</p> <p>17 And if you turn it, by turning that</p> <p>18 polarizing analyzers you can change the direction of</p> <p>19 the wavelength of light which gives you the ability to</p> <p>20 identify by colors the types of minerals you're looking</p> <p>21 at.</p> <p>22 Q So what is its detection limit?</p> <p>23 A Polarized light microscopy, the advantages are it</p> <p>24 can positively identify different types of asbestos.</p> <p>25 It can give you the geometrical shape of the minerals</p>	<p style="text-align: right;">49</p> <p>1 A This is a new state of the art transmission</p> <p>2 electron microscope and it's an automated transmission</p> <p>3 electron microscope. And this is the next generation.</p> <p>4 This is, if you had pictures of an older transmission</p> <p>5 electron microscope, where the column is, that tall</p> <p>6 thing and towards the bottom you would have almost a</p> <p>7 viewing port that you would look at, and you would have</p> <p>8 handles to turn to move the sample around.</p> <p>9 That's all been replaced by a joystick,</p> <p>10 roller ball, and knobs so you actually can sit and look</p> <p>11 at the screen instead of directly looking into the</p> <p>12 microscope.</p> <p>13 Q And, I mean, you said that this is state of</p> <p>14 the art. Is this actually yours?</p> <p>15 A That's sitting in our laboratory. Yes. We've had</p> <p>16 it for about a year.</p> <p>17 Q How expensive is one of these?</p> <p>18 A If you were to go out and buy that microscope with</p> <p>19 everything on it, it's getting close to \$800,000.</p> <p>20 Q I guess, could you tell us what's the level</p> <p>21 of detection for TEM?</p> <p>22 A You can detect down to, for asbestos, for talc</p> <p>23 samples, we have gotten a detection limit down to 3,000</p> <p>24 fibers or bundle s of asbestos per gram of cosmetic</p> <p>25 talc.</p>

<p style="text-align: right;">50</p> <p>1 Q You said 3,000?</p> <p>2 A Yes.</p> <p>3 Q You said per gram?</p> <p>4 A Correct. I'm not sure anybody has a lower</p> <p>5 detection limit than that we are using right now.</p> <p>6 Q Can you tell me a little bit about how this</p> <p>7 works? And I've also brought, this is Exhibit 263.</p> <p>8 What is this and how does that work with TEM?</p> <p>9 A That's actually the grid. The TEM grid. That's</p> <p>10 actually the sample holder for this microscope. Now,</p> <p>11 it's been blown up. That round disk there with the</p> <p>12 hole, with the squares in it is actually only three</p> <p>13 millimeters in size from side to side.</p> <p>14 And that's the biggest sample you can put</p> <p>15 into a transmission electron is a three millimeter and</p> <p>16 they call them TEM grids. You'll hear TEM grids and</p> <p>17 TEM grid openings. If you look in the middle there,</p> <p>18 you can see -- the light is --</p> <p>19 Q Does that help?</p> <p>20 A Yes. You can see all these squares. Those are</p> <p>21 100 squares and these are finder grids. You can see at</p> <p>22 the top it goes from A to J and down the side it goes</p> <p>23 from essentially 1 to 10.</p> <p>24 So what the TEM microscopist will do is look</p> <p>25 in these grid openings, it's a process of transferring</p>	<p style="text-align: right;">52</p> <p>1 300 grid openings, 500 grid openings. It takes a lot</p> <p>2 longer, but if you want the sensitivity you have to do</p> <p>3 these things, either prepare the sample differently or</p> <p>4 look at more grid openings. The TEM stays the same.</p> <p>5 Q So are each of these methods useful?</p> <p>6 A For -- depending what you're analyzing for</p> <p>7 cosmetic talc, for certain mines, I don't believe XRD</p> <p>8 has any utility. It's not sensitive enough. It can't</p> <p>9 tell you what form the potential asbestos is in.</p> <p>10 But over the years, on the research we've</p> <p>11 done, I'm more that you -- I believe you need to do now</p> <p>12 at least two different types of PLM analysis as well as</p> <p>13 TEM analysis to characterize cosmetic talcs.</p> <p>14 Q Has PLM analysis evolved over time?</p> <p>15 A It's pretty much stayed the same. We decided that</p> <p>16 we had to take it in our laboratory to a higher</p> <p>17 sensitivity level that's not usually standard out in</p> <p>18 the industry. Because again, PLM was really designed</p> <p>19 for asbestos added products, all the protocols we'll</p> <p>20 say construction products. In order to get to the</p> <p>21 detection limits you need, you have to take some extra</p> <p>22 steps with the PLM that we do now.</p> <p>23 Q Last kind of testing I wanted to talk to you</p> <p>24 about is air sampling. Can you tell me about that?</p> <p>25 A Sure. Again, the samples that we analyze by</p>
<p style="text-align: right;">51</p> <p>1 the sample on top of that grid, where you can see</p> <p>2 through it, and he'll say, okay, A4 I found an asbestos</p> <p>3 fiber or bundle. Anybody can go back to A4 and look at</p> <p>4 that if they want to see it. So we analyze by grid</p> <p>5 openings. And a number of grid openings and how the</p> <p>6 sample is prepared tells you how good your detection</p> <p>7 limit is.</p> <p>8 The TEM itself hasn't changed much in the</p> <p>9 last 40, 50 years, just better resolution but for</p> <p>10 asbestos. It's all about the sample preparation. If</p> <p>11 you do a lousy sample preparation and don't take into</p> <p>12 account detection limits, you have really high</p> <p>13 detection limits. The instrument has nothing to do</p> <p>14 with the sample prep. So the sample prep is key for</p> <p>15 TEM analysis.</p> <p>16 Q You talked about grids. It looks like this</p> <p>17 would be 100 grids, right?</p> <p>18 A Correct. Each grid typically has 100 grids. For</p> <p>19 our analysis we analyzed two grids, 50 openings on each</p> <p>20 for 100 grid openings.</p> <p>21 Q So you usually do 100 grid openings, you</p> <p>22 said?</p> <p>23 A Usually. Sometimes we will do more, depending on</p> <p>24 the sample preparation. I think we've done as high as,</p> <p>25 not for the bulk analysis, for other things, as high as</p>	<p style="text-align: right;">53</p> <p>1 transmission electron microscopy and even by optical</p> <p>2 microscopy is bulk samples. You know, we're talking</p> <p>3 here about cosmetic talc, but other types of samples of</p> <p>4 bulk samples for asbestos; water samples for asbestos;</p> <p>5 tissue samples for asbestos; dust particles for</p> <p>6 asbestos. And each way you collect the sample always</p> <p>7 ends up on a filter that you're going to process for</p> <p>8 TEM.</p> <p>9 So there's -- makes no difference how the</p> <p>10 asbestos got on that filter. In one case it's an air</p> <p>11 sample. In another case it's a detection limit. In</p> <p>12 another case it's a water sample. It's all got to be</p> <p>13 collected on a filter to go into the transmission</p> <p>14 electron microscope. Air sample is nothing more than</p> <p>15 that.</p> <p>16 If you wanted to know if you could detect</p> <p>17 asbestos in the air in this courtroom, you would take</p> <p>18 an air sample. They're usually a cassette, a lot of</p> <p>19 them look like what 35 millimeter film canisters look</p> <p>20 like that they don't sell anymore. And in the bottom</p> <p>21 of that cassette is a filter specifically designed to</p> <p>22 let air through but trap all the microscopic particles</p> <p>23 that are in the air. Then you take that filter and you</p> <p>24 can prepare it for the TEM or the optical microscopy to</p> <p>25 count how many fibers.</p>

<p style="text-align: right;">54</p> <p>1 If you're looking at cosmetic talc, you put</p> <p>2 it on a filter; however, you're using usually some sort</p> <p>3 of liquid. The filter collects the talc and any</p> <p>4 asbestos there, and then you put it in the TEM or</p> <p>5 whatever you're going to use. It's all the same.</p> <p>6 So air sampling is something that our</p> <p>7 laboratory routinely does and a lot of contract labs</p> <p>8 do.</p> <p>9 Q So air sampling, can you actually tell how</p> <p>10 many fibers are in a particular amount of air?</p> <p>11 A Yes.</p> <p>12 Q How is that measured?</p> <p>13 A The air samples, the cassettes are hooked to a</p> <p>14 pump that will pull air through it at a very precise</p> <p>15 rate. So you can say all right, I sampled this air and</p> <p>16 I sampled ten liters of air. There's a thousand cubic</p> <p>17 centimeters in every liter. And we report our results</p> <p>18 in fibers per cc or cubic centimeter. Cubic centimeter</p> <p>19 is about the size of a sugar cube. That's stayed</p> <p>20 pretty standard for a long time now.</p> <p>21 Q I'm going to write here, just so I remember</p> <p>22 fibers per cc, put sugar cube.</p> <p>23 A Or cubic centimeter also known as milliliters, ml.</p> <p>24 You might see ml or cc. It's all the same.</p> <p>25 So once we analyze that sample, then we</p>	<p style="text-align: right;">56</p> <p>1 Ercilyn, if I could get the Elmo? Thank you</p> <p>2 so much.</p> <p>3 BY MS. COOPER:</p> <p>4 Q All right. Dr. Longo, welcome back.</p> <p>5 So before we move off of different kinds of</p> <p>6 testing, we've heard so much kind of the pieces about</p> <p>7 the concentration method. So can you tell me just</p> <p>8 briefly, we're going to talk about it more in a minute,</p> <p>9 what is the concentration method?</p> <p>10 A It's essentially the sample preparation part of</p> <p>11 the analysis, where you use a heavy liquid density</p> <p>12 separation, meaning the liquid that you have the</p> <p>13 material in is denser than one type of material, but</p> <p>14 lighter than the other.</p> <p>15 So think of a cork. The density of water is</p> <p>16 one gram per cubic centimeter. Cork is lighter than</p> <p>17 that, has less density, so it floats. A sinker on a</p> <p>18 fish line made out of lead has a higher denser than</p> <p>19 water so it sinks.</p> <p>20 We use the same concept with separating out</p> <p>21 asbestos from talc. We put a heavy liquid in the</p> <p>22 mixture and then the density of the liquid we're using</p> <p>23 is, it is lower than the talc, but higher than the</p> <p>24 asbestos we're looking for. Put it in a centrifuge,</p> <p>25 spin it real fast, talc goes to the top and the</p>
<p style="text-align: right;">55</p> <p>1 report the results in the numbers of fibers found, if</p> <p>2 any, in that one cc, and that's the standard reporting</p> <p>3 method for that.</p> <p>4 Q I want to talk to you a little bit about this</p> <p>5 idea of scientific integrity and then I want to --</p> <p>6 THE COURT: Before you move on to scientific</p> <p>7 integrity, we're going to talk a morning break now.</p> <p>8 MS. COOPER: Yes, your Honor.</p> <p>9 THE COURT: Members of the jury, we're taking</p> <p>10 the morning break now. Please leave your notebooks</p> <p>11 here. Do not discuss anything in relation to the case,</p> <p>12 including the testimony that you've heard. No research</p> <p>13 of any kind whatsoever.</p> <p>14 Enjoy your break. Be ready to come back</p> <p>15 upstairs at 10:45. Thank you. Enjoy your break.</p> <p>16 (Jury exits.)</p> <p>17 THE COURT: Dr. Longo, you may step down.</p> <p>18 See everyone at 10:45.</p> <p>19 (Recess: 10:31 a.m. to 10:50 a.m.)</p> <p>20 COURT OFFICER: Jury entering.</p> <p>21 (Jury enters.)</p> <p>22 THE COURT: Please be seated. Make sure cell</p> <p>23 phones are turned off.</p> <p>24 Thank you. Miss Cooper, you may continue.</p> <p>25 MS. COOPER: Thank you, your Honor.</p>	<p style="text-align: right;">57</p> <p>1 amphibole minerals go to the bottom. And then you take</p> <p>2 that tube and I call it harvest, you harvest the bottom</p> <p>3 tip and analyze that.</p> <p>4 So now you have separated out and you have</p> <p>5 concentrated the amphibole minerals you're interested</p> <p>6 in at the bottom so you greatly increase your</p> <p>7 analytical sensitivity. That's it in a nutshell.</p> <p>8 Q Just clear as mud, a little nutshell.</p> <p>9 All right. We're going to go back to that</p> <p>10 and kind of explain a little bit more, but before we do</p> <p>11 that, let's talk about scientific integrity.</p> <p>12 So first of all, you're a scientist. Is that</p> <p>13 correct?</p> <p>14 A Yes.</p> <p>15 Q And is it your job to just kind of call it</p> <p>16 the way you see it?</p> <p>17 A Yes.</p> <p>18 Q Is it your job to report it if you do see it?</p> <p>19 A Yes.</p> <p>20 Q Is that good science?</p> <p>21 A It is.</p> <p>22 Q So we heard a lot of testimony from our fact</p> <p>23 witness yesterday, Dr. Hopkins, saying I've never seen</p> <p>24 confirmed positive asbestos tests. So my first</p> <p>25 question is, as a scientist, can you explain the idea</p>

<p style="text-align: right;">58</p> <p>1 of confirming test results?</p> <p>2 A I'm not sure how to respond to that since a</p> <p>3 positive asbestos test is positive. It shows it's</p> <p>4 there. Now, you can go back later and somebody in QC</p> <p>5 can verify. But when we do asbestos analysis and we</p> <p>6 have a positive test, we report it as positive. And</p> <p>7 this is how we did it and it's positive and we've done</p> <p>8 that for 30 years. So it's unclear why you have to</p> <p>9 confirm a positive test.</p> <p>10 Now, you may want to confirm it's positive in</p> <p>11 XRD and you'd have to see if it's got fibers or not.</p> <p>12 But if you're doing TEM analysis or PLM analysis that</p> <p>13 should be all you need, except for maybe all the</p> <p>14 assurance, say like 10 percent of the samples, but</p> <p>15 that's it. I don't understand quite that comment.</p> <p>16 Q So really is the first result, is that a</p> <p>17 valid scientific finding if you find asbestos?</p> <p>18 A Yes. If you're using the proper tool that can</p> <p>19 tell you if it's asbestos or not, that is a valid test.</p> <p>20 Q So do you need a bunch of other labs to come</p> <p>21 and confirm that you saw what you saw?</p> <p>22 A No. As long as you have a quality control program</p> <p>23 in place which usually calls for 10 percent of the</p> <p>24 samples, in some cases. But every positive test by</p> <p>25 either PLM or transmission electron microscopy, you do</p>	<p style="text-align: right;">60</p> <p>1 can comment on that or not.</p> <p>2 Q What about this; do you know if the FDA</p> <p>3 actually did testing themselves?</p> <p>4 A FDA typically does not do their own testing. They</p> <p>5 have sent cosmetic talc samples to be tested under</p> <p>6 contract. Back in the mid, early to mid 1970s,</p> <p>7 Dr. Levin had a contract to do that analysis, and as</p> <p>8 recently as 2009 and 2010 they put a contract out, I</p> <p>9 think four laboratories bid on it, and it was given to</p> <p>10 the lowest bidder is my understanding, the AMA. So</p> <p>11 they don't do their own testing.</p> <p>12 Q So I have here, we know that the FDA</p> <p>13 regulates lots of things. Quite a busy organization.</p> <p>14 I've got a few listed here. So food, dietary</p> <p>15 supplements, drugs, that sort of thing.</p> <p>16 MR. DUBIN: Your Honor, I'm going to object.</p> <p>17 It's beyond the witness's qualifications.</p> <p>18 THE COURT: Absolutely. The witness is not</p> <p>19 here to discuss FDA regulations in relation to this, so</p> <p>20 let's on, please.</p> <p>21 BY MS. COOPER:</p> <p>22 Q Dr. Longo, do you know if they have any</p> <p>23 regulations of talc?</p> <p>24 MR. DUBIN: Same objection.</p> <p>25 THE COURT: Objection is sustained.</p>
<p style="text-align: right;">59</p> <p>1 not have all those samples confirmed. That's not how</p> <p>2 it's done.</p> <p>3 Q We also heard yesterday a lot about the idea,</p> <p>4 you mentioned the concentration method, the idea that</p> <p>5 the FDA rejected the concentration method. Okay.</p> <p>6 So first of all, do you know if the FDA</p> <p>7 actually regulates asbestos testing at all?</p> <p>8 A FDA does not regulate asbestos in cosmetic talc.</p> <p>9 They don't have any regulation for that.</p> <p>10 Q And do you know, is asbestos testing</p> <p>11 self-regulated or self-testing? What does that mean?</p> <p>12 A It means that the, for that it's self-regulating</p> <p>13 means it's up to whoever's regulating the cosmetic talc</p> <p>14 to police themselves, so to speak.</p> <p>15 Q And when you say, "police themselves," so</p> <p>16 they find the test, are they supposed to report it to</p> <p>17 the FDA?</p> <p>18 A I don't think so. I'm not aware of that, if that</p> <p>19 is a requirement of any sort.</p> <p>20 Q Would you say that was a moral requirement</p> <p>21 they should report it?</p> <p>22 A I don't like to get into moral aspects of it, so I</p> <p>23 can't really comment that it's a moral obligation.</p> <p>24 That's something for Johnson & Johnson to make that</p> <p>25 decision what they want to do or not. I don't think I</p>	<p style="text-align: right;">61</p> <p>1 BY MS. COOPER:</p> <p>2 Q Let's get down our road, Dr. Longo.</p> <p>3 The next thing I want to talk about is good</p> <p>4 testing versus bad testing. Okay?</p> <p>5 A Yes.</p> <p>6 Q First off, we talked about the different</p> <p>7 tests and how they have different methods of detection.</p> <p>8 Are the best tests efficient in finding the asbestos?</p> <p>9 A I mean, the best test or the best procedure gives</p> <p>10 you the higher ability to detect asbestos, higher and</p> <p>11 higher in sensitivity, so it's a matter of keep working</p> <p>12 on those analytical sensitivities to keep improving</p> <p>13 them.</p> <p>14 Q If you're trying to find asbestos is it</p> <p>15 important to have a sensitive test?</p> <p>16 A Yes.</p> <p>17 Q If you don't have a sensitive test are you</p> <p>18 going to find asbestos at low levels?</p> <p>19 A If the concentration is below the analytical</p> <p>20 sensitivity of the method you're using, then you reduce</p> <p>21 the chances of actually finding the asbestos, if it's</p> <p>22 present. So if you have a method that has a very, we</p> <p>23 call it low, but a poor analytical sensitivity, then if</p> <p>24 there's asbestos present at a little concentration, you</p> <p>25 won't see it.</p>

16 (Pages 58 to 61)

<p style="text-align: right;">62</p> <p>1 So you want the methods that give you the</p> <p>2 best analytical sensitivity for the tool. And it's all</p> <p>3 about sample preparation. The microscopes don't change</p> <p>4 much. You can enhance them somewhat, like for the</p> <p>5 polarized light microscopy work we do in our lab, but</p> <p>6 the TEMs don't really change that much. It's all about</p> <p>7 how you prepare the sample to get the best analytical</p> <p>8 sensitivity.</p> <p>9 Q So I want to talk to you about what Johnson &</p> <p>10 Johnson did. Do you know how they went about testing</p> <p>11 their talc?</p> <p>12 A Yes.</p> <p>13 Q Can you tell me, what was that?</p> <p>14 A They used XRD, x-ray diffraction, they have used</p> <p>15 polarized light microscopy, PLM, and they have used</p> <p>16 transmission electron microscopy, and they use the</p> <p>17 U.S.P. method. They've actually used infrared which is</p> <p>18 not a technique that's recognized by anybody other than</p> <p>19 U.S.P. for detecting asbestos.</p> <p>20 Q We've heard a little bit about what's called</p> <p>21 the J4 method. Do you know what that is?</p> <p>22 A Yes. That's the, essentially it's XRD primarily,</p> <p>23 but it's infrared XRD and PLM.</p> <p>24 Q And can you tell me who developed the J4-1</p> <p>25 method?</p>	<p style="text-align: right;">64</p> <p>1 MS. COOPER: Your Honor, at this point</p> <p>2 plaintiffs offer 7275. Tendering to defense counsel</p> <p>3 for examination.</p> <p>4 MR. DUBIN: No objection.</p> <p>5 THE COURT: So admitted.</p> <p>6 BY MS. COOPER:</p> <p>7 Q So, Dr. Longo, do you recognize this to be</p> <p>8 the J4-1 method?</p> <p>9 A Yes.</p> <p>10 Q You mentioned a few of the test methods that</p> <p>11 we just mentioned, right; XRD, which was what we talked</p> <p>12 about, sample larger samples. And we talked about</p> <p>13 optical microscopy. Is that PLM?</p> <p>14 A PLM and dispersion staining, which is part of the</p> <p>15 polarized light microscopy technique.</p> <p>16 Q So first of all, you talked about the</p> <p>17 first -- first, do you find this to be a reliable</p> <p>18 method for testing talc?</p> <p>19 A Yes and no.</p> <p>20 Q What do you mean by yes and no?</p> <p>21 A For industrial talc where the concentrations of</p> <p>22 asbestos can be fairly high, these techniques will</p> <p>23 work. I wouldn't stop at a negative on X-ray</p> <p>24 diffraction because of poor sensitivities, but you can</p> <p>25 usually determine in industrial talcs by PLM, but if</p>
<p style="text-align: right;">63</p> <p>1 A I think it was the Cosmetic Toilet -- CTA, as well</p> <p>2 as Johnson -- I think Johnson & Johnson was involved in</p> <p>3 that, too.</p> <p>4 Q So you just said C --</p> <p>5 A I can't think of all the acronyms.</p> <p>6 Q It's CTFA.</p> <p>7 A That's it.</p> <p>8 Q Do you know what that is?</p> <p>9 A It's a cosmetic, you know, talc association. They</p> <p>10 call it cosmetic, toiletries and a couple other things.</p> <p>11 It's sort of an organization designed for the cosmetic</p> <p>12 company, cosmetic industry.</p> <p>13 Q I'm going to put down here cosmetic,</p> <p>14 toiletries, and I think it's actually fragrance</p> <p>15 association.</p> <p>16 A Thank you.</p> <p>17 Q There's a lot of acronyms in this.</p> <p>18 So you said that basically they are the</p> <p>19 industry group?</p> <p>20 A Yes.</p> <p>21 Q And was Johnson & Johnson a member of that?</p> <p>22 A Yes.</p> <p>23 Q So you mentioned that they used kind of a</p> <p>24 combination of our different test methods that we just</p> <p>25 talked about, so I want to talk to you about that.</p>	<p style="text-align: right;">65</p> <p>1 it's negative you need to go further in my opinion to</p> <p>2 TEM. For cosmetic talcs, no, I don't believe this is a</p> <p>3 reliable method.</p> <p>4 Q Okay. So I want, and actually have, I</p> <p>5 thought about this, and I mentioned in opening, the</p> <p>6 idea of sensitivity. And I got a bathroom scale here.</p> <p>7 Okay?</p> <p>8 So you talked about XRD and the sensitivity</p> <p>9 that XRD has and you said it's not very sensitive. So</p> <p>10 if I am trying to find something really small. And I</p> <p>11 guess there's asbestos in this, hopefully really small.</p> <p>12 If we're trying to find something as small as a needle</p> <p>13 is something like this bathroom scale, is it going to</p> <p>14 pick up something like a needle?</p> <p>15 A No. It's not sensitive enough. It's not</p> <p>16 designed -- it's not sensitive enough to weigh a</p> <p>17 needle.</p> <p>18 Q So go ahead and try. Turn this on here. So</p> <p>19 this measures in what, pounds?</p> <p>20 A Pounds. Sometimes it will do kilograms if it's</p> <p>21 one of the new ones. So you can see the sensitivity</p> <p>22 there is .0, so it's sensitive down to maybe a tenth of</p> <p>23 a pound or two-tenths of a pound maybe.</p> <p>24 Q All right. So if I have this needle and I</p> <p>25 just put it on here, all right, so I got nothing?</p>

<p style="text-align: right;">66</p> <p>1 A Correct.</p> <p>2 Q Does that mean the needle's not there?</p> <p>3 A No. It means your test method is not sensitive</p> <p>4 enough to see that you have a needle present by just</p> <p>5 weight.</p> <p>6 Q Okay. So when we're talking about</p> <p>7 sensitivity and test methods if we're using XRD, if</p> <p>8 Johnson & Johnson first put things on XRD and it said,</p> <p>9 sorry, there's no needle, what did they do?</p> <p>10 A They stopped. They didn't go any further.</p> <p>11 Q So with theirs, and I'm going to write</p> <p>12 bathroom scale here so that we keep it in mind. If it</p> <p>13 doesn't pick up the needle on the bathroom scale they</p> <p>14 would stop. Why is that a problem?</p> <p>15 A Because the sensitivities are so bad. If it still</p> <p>16 could be present at just a lower weight percent than,</p> <p>17 say, I think then it was .3 or .5 was the detection</p> <p>18 limit, and you can have something there --</p> <p>19 Q You said .3 or .5?</p> <p>20 A I think that was their detection limit back when</p> <p>21 that was being done in 1975. The XRDs are better</p> <p>22 today. But you can have a .1 percent detection limit,</p> <p>23 .1 percent in the sample, and if you equate that to the</p> <p>24 amount of fibers and bundles of asbestos it takes to</p> <p>25 get to .1, that's tens to hundreds of millions at .1.</p>	<p style="text-align: right;">68</p> <p>1 detect, at least in our laboratory now, down to less</p> <p>2 than .1 percent. But the usual method for doing PLM</p> <p>3 analysis is not that sensitive. So if you were finding</p> <p>4 .3 to .5 percent by XRD, you shouldn't have any trouble</p> <p>5 looking at it and determining it, unless it's less than</p> <p>6 .1 of the fibrous part. And then that method would not</p> <p>7 be able to see it unless you did a lot more to the</p> <p>8 microscope to get at that sensitivity.</p> <p>9 Q So if they weren't able to, say, find it on</p> <p>10 PLM, so it was enough to get past the bathroom scale,</p> <p>11 got to PLM, if they weren't able to find it on PLM what</p> <p>12 would they do?</p> <p>13 A They would call it pass. There's nothing there.</p> <p>14 Q So again, was this a good way to find</p> <p>15 asbestos, especially at low levels?</p> <p>16 A If you have very low levels, no. It has a problem</p> <p>17 with sensitivities. And it has problems with</p> <p>18 resolution of certain size asbestos fibers. The PLM is</p> <p>19 very good at finding what I say is a portion of these</p> <p>20 samples that are very big bundles of asbestos. It's</p> <p>21 not very good when you have single fibers. It can't</p> <p>22 really see them. If you see them it can't do the</p> <p>23 wavelength analysis to positively identify what's</p> <p>24 present. Through the polarized light and dispersion</p> <p>25 staining.</p>
<p style="text-align: right;">67</p> <p>1 Q So it would be like I have to put on, say,</p> <p>2 boxes and pounds of needles before we even get it to</p> <p>3 even register?</p> <p>4 A Yeah. You'd have to start putting a lot more</p> <p>5 needles on there.</p> <p>6 Q All right. So we have that test. And if</p> <p>7 they didn't find it then -- or say they did. So they</p> <p>8 would have, say, the boxes and pounds of needles on the</p> <p>9 bathroom scale. What happened next?</p> <p>10 A Well, if it was positive and then they would go to</p> <p>11 optical microscopy to see if it was fibrous or not.</p> <p>12 Because remember, XRD can't tell you anything about the</p> <p>13 crystalline habit, is it fibrous, is it a geode, is it</p> <p>14 cubes, is it, call it massive which is just essentially</p> <p>15 pieces of rock.</p> <p>16 Q Right.</p> <p>17 A So then you would use the optical microscope to</p> <p>18 verify that if it was fibrous or not.</p> <p>19 Q So once they got to PLM, we talked a little</p> <p>20 bit about PLM. Is there issues still when you get to</p> <p>21 this section about whether or not you will be able to</p> <p>22 find the asbestos?</p> <p>23 A Well, yes and no.</p> <p>24 Q Okay. Could you explain?</p> <p>25 A On the yes part, you can design a PLM analysis to</p>	<p style="text-align: right;">69</p> <p>1 Q So you said it's hard to find single fibers</p> <p>2 on PLM?</p> <p>3 A You can't. You can't -- you may see them, but you</p> <p>4 can't do the different -- the different wavelengths of</p> <p>5 light and polarizing that actually identify it because</p> <p>6 of the colors and the size of the wavelengths. So it</p> <p>7 falls apart down at the smaller end of the width of the</p> <p>8 asbestos fibers.</p> <p>9 You can see big bundles. We routinely see</p> <p>10 that in our laboratory with these types of analysis</p> <p>11 now. But it has a very hard problem, well, it's almost</p> <p>12 impossible to see single fibers that -- where you can</p> <p>13 identify it, not just that you see it.</p> <p>14 Q So we heard a lot about the fact that that</p> <p>15 wasn't where Johnson & Johnson stopped. They also did</p> <p>16 TEM. So can you tell us, does that solve the problem?</p> <p>17 If we do TEM, if we moved on from this, and it got a</p> <p>18 pass or a fail based on this, and they did TEM, what's</p> <p>19 the problem then? Can you find asbestos using TEM?</p> <p>20 A You can. The TEM is, in my opinion, the best</p> <p>21 method, the most sensitive method for positively</p> <p>22 identifying asbestos at these low concentrations. But</p> <p>23 the TEM itself can't do it unless you prepare the</p> <p>24 sample properly. It's all about sample preparation.</p> <p>25 If you prepare the sample and the analytical</p>

<p style="text-align: right;">70</p> <p>1 sensitivity is very bad, you're still going to miss the 2 asbestos. If you use the appropriate preparation 3 method to increase that analytical sensitivity, then 4 you can get to very good detection limits or analytical 5 sensitivity. It's all about the sample preparation. 6 It's not the TEM that's the problem. It's the sample 7 preparation that dictates everything that happens in 8 that TEM.</p> <p>9 Q I like to think of TEM kind of like this 10 jeweler scale, right?</p> <p>11 A It's a lot more expensive.</p> <p>12 Q The microscope.</p> <p>13 So we couldn't pick up our needle on our 14 bathroom scale. But if this is TEM, is it going to 15 pick up this needle, right?</p> <p>16 A That should have the sensitivity for one needle, 17 yes. It's essentially 242 milligrams.</p> <p>18 Q More sensitive, right? Put on two needles?</p> <p>19 A It is sensitive enough to pick up and show you the 20 weight of those particular two needles. So the 21 analytical sensitivity for how much it weighs has been 22 increased so that you can weigh smaller and smaller 23 things.</p> <p>24 Some of these, some of these scales we have, 25 we have one that can measure down to two to three</p>	<p style="text-align: right;">72</p> <p>1 A It still has a sensitivity issue, because in order 2 to find the needles, say you have needles in a 3 haystack, take away from the scale; if you have the 4 needles in the haystack and you go and grab some of the 5 hay, your chances are you may not grab the hay with the 6 needles in it.</p> <p>7 If you can remove the hay and just leave the 8 needles, it now increases your ability or increases 9 your, we'll call it analytical sensitivity to find the 10 needles 'cause you've gotten rid of the hay. So, and 11 then you go into the TEM. It's all about the method.</p> <p>12 Q I've got us a demonstrative here again.</p> <p>13 We're talking about if we have this, and this is talc, 14 and if we have a needle that's in this haystack, what's 15 wrong with just using this teeny little scale to try 16 and find the needle in this haystack?</p> <p>17 A You can't analyze the whole haystack. You can't 18 analyze all the talc in one bottle. Trying to analyze, 19 say, an eight-ounce or ten-ounce bottle of cosmetic 20 talc, say, container, every bit of material in there 21 may take you a few hundred years to do that.</p> <p>22 Q Wait. A little bottle like this. Do you 23 know how long it would take Johnson & Johnson to test a 24 bottle this size on something little and teeny like 25 their TEM?</p>
<p style="text-align: right;">71</p> <p>1 micrograms. But you can't take that into the lab, in 2 here. It has to be on a vibration free table. If you 3 don't, you can walk by it and it'll move it so, just 4 because of the vibration coming from your feet walking 5 on the floor.</p> <p>6 Q So we heard Johnson & Johnson went beyond and 7 did TEM. I guess, have you actually looked at their 8 procedure?</p> <p>9 A Yes. And again, TEM is a very good tool. It's 10 the sample preparation is the problem.</p> <p>11 MS. COOPER: And, your Honor, at this time 12 plaintiff offers 5781. Tendering to defense counsel 13 for examination.</p> <p>14 MR. DUBIN: No objection.</p> <p>15 MS. COOPER: Your Honor, may I approach?</p> <p>16 THE COURT: Yes.</p> <p>17 BY MS. COOPER:</p> <p>18 Q Dr. Longo, I'm going to hand you Plaintiff's 19 5781. Can you tell me what that is?</p> <p>20 A This is Johnson & Johnson's TEM 7024 method and 21 this one is a 1995 issue. And it is their TEM method.</p> <p>22 Q Okay. Now, you said that, so TEM is 23 sensitive enough to actually find the needles, right? 24 You were able to show that. So what's wrong with just 25 doing this procedure?</p>	<p style="text-align: right;">73</p> <p>1 A The preparation method used for a bottle that 2 size, to analyze all the talc in there by TEM is 3 approximately almost four years of one person, one 4 microscope. If you had four microscopes and they 5 worked every day, it would only take you one year.</p> <p>6 Q So essentially, with their TEM procedure, are 7 they just pinching off teeny bits of this haystack and 8 putting it on the teeny tiny scale to try to figure out 9 if there's a needle in it?</p> <p>10 A That's correct. They're not concentrating the 11 needles. And that would be for every lab. Any lab who 12 used a -- if you don't have a method for increasing the 13 concentration or not using it, every TEM lab would have 14 the same problem. You either concentrate the sample or 15 instead of looking at, say, 10 or 20 grid openings you 16 look at a thousand grid openings. And even then you 17 can't get close to the analytical sensitivity unless 18 you remove the hay.</p> <p>19 Q Okay. So let's actually jump ahead a little 20 bit and let's talk about this concentration method 21 'cause we keep talking about removing the hay. So 22 let's talk about that.</p> <p>23 What do you mean and how can we concentrate 24 this where we can actually find needles if there was 25 needles in this haystack?</p>

<p style="text-align: right;">74</p> <p>1 A If you have needles in that haystack and I would 2 get a very large container that would hold that, I'd 3 fill it up with water and I would throw all that hay in 4 there, stir it up. The hay will primarily float and 5 the needles will go to the bottom. I'd scoop all that 6 hay off there and then I would take that water and 7 filter it and see the needles. 8 I would concentrate the needles by removing 9 the hay. The concentration method does the exact same 10 thing on a different scale, of course. Put the talc in 11 the heavy liquid density material, put it in a 12 centrifuge, spin it around, talc goes to the top. The 13 amphibole asbestos minerals goes to the bottom. It's 14 heavier, the talc is lighter. And then you get rid of 15 the talc, remove that small portion at the bottom of 16 the centrifuge tube, filter it, see what's there. 17 That increases the sensitivity because I've 18 taken it from being all spread out in that sample of 19 talc to being in the bottom of the centrifuge tube. It 20 increases your analytical sensitivity. It increases 21 your ability to detect asbestos at a much lower -- much 22 higher analytical sensitivity which is lower amounts of 23 asbestos fibers per gram of talc. 24 There's a big wide difference in analytical 25 sensitivity A, after the heavy liquid density</p>	<p style="text-align: right;">76</p> <p>1 much pasketti -- spaghetti. I sound like my kids a 2 long time ago. 3 Q I was going to say, I'm like, oh, you have 4 kids. 5 A Long time ago. 6 But if I take the noodles, so I don't 7 mispronounce it again, and spread it all out, so 8 they'll dilute it and dilute it and dilute it so they 9 can see if there's a meatball there. Concentration 10 method gets rid of the spaghetti and you can see that 11 there's a meatball. 12 So it's two different techniques. If you use 13 the method B, you have to dilute the sample really far. 14 And if you use method A, you can look at the whole 15 sample that method B was starting with, but have it 16 diluted. 17 Q Did Johnson & Johnson ever use the 18 concentration method? Have they ever adopted the 19 testing method? 20 A No, they didn't. 21 Q Do you know if they knew about it, though? 22 A Yes, they did. 23 Q So we've already seen this exhibit. It's 24 Plaintiff's Exhibit 7. It's from Colorado School of 25 Mines. Do you know who they are?</p>
<p style="text-align: right;">75</p> <p>1 separation, and analytical -- the amount of fibers and 2 bundles you need to get in order to see it in sample B. 3 It's a wide gulf between the two. 4 Q So if I am understanding you correctly, 5 basically if there's needles in this haystack, get rid 6 of the hay and concentrate it down. I was thinking of 7 orange juice concentrate, right? If it's just the 8 concentrate. We concentrate it down. 9 So are we actually testing concentrate 10 instead of just testing a teeny bit and putting it on 11 the scale? 12 A Correct. We're removing -- we're still testing 13 small amounts. We -- both procedures start off with 14 about the same amount. Procedure B has to dilute that 15 talc, dilute that sample so the talc doesn't pile up in 16 the TEM. TEM is not good if you have things piled on 17 top of each other. Electron beam can't go through it. 18 Like X-rays, you know, if you took an X-ray 19 of like five hands on top of each other, nobody's going 20 to be able to see through it. And if you're looking 21 through this with the other hands on top, TEM's the 22 same way. So they have to dilute it really a lot to 23 count it. 24 Think of a bowl of spaghetti. If there's a 25 meatball in there at the bottom, you can't tell. Too</p>	<p style="text-align: right;">77</p> <p>1 A Yes, I do. 2 Q Looks like they wrote to Johnson & Johnson 3 and they said, "As the impurity level becomes very low" 4 -- and would you agree that the impurity level is low 5 in Johnson & Johnson Baby Powder? 6 A I would agree. 7 Q -- "it is necessary to examine increasingly 8 larger amounts of sample in order to detect the 9 impurity." 10 So if we're concentrating this haystack down, 11 is that allowing you to test a larger sample? 12 A Yes. 13 Q "As a result of the requirement to detect the 14 proverbial needle in a haystack," right, "we have 15 evolved a procedure which pre-concentrates the 16 impurities prior to examination." 17 So again, we got this from Johnson & Johnson. 18 They knew about that method. 19 A That's correct. They did. 20 Q Also looking at page 4, it says, "Based on 21 past experience with detecting and identifying minerals 22 when present at low levels, a concentration of the 23 phases to be detected was considered essential." 24 Would you consider it essential that you need 25 to concentrate the haystack down to find the needles?</p>

<p style="text-align: right;">78</p> <p>1 A Yes. It's the only way to get a reasonable 2 detection limit or analytical sensitivity. 3 Q Have you ever heard of Professor Pooley? 4 A I have. 5 Q Who is he? 6 A Geologist. Dr. Pooley did a lot of the early work 7 on cosmetic talc and analysis of it. 8 Q Okay. Have you seen, this is Plaintiff's 9 Exhibit 51 already in evidence. 10 Have you seen this document, this perspective 11 -- proposed specs for analyzing talc for asbestos? 12 A I have. 13 Q Have you seen that they find, Pooley, .05 of 14 the tremolite type in Vermont. Have you seen that 15 finding before? 16 A Yes. Using the pre-concentration method. 17 Q This is for asbestos, right? Says right 18 there on the cover? 19 A Yes. 20 Q Now, looking at page 5 of the document says, 21 "Pre-concentration of asbestos followed by X-ray 22 diffraction analysis." 23 So was Dr. Pooley using, concentrating down 24 and using TLM, or what exactly was he doing? 25 A In this particular case he was using XRD, but he</p>	<p style="text-align: right;">80</p> <p>1 A You have to. 2 Q To be clear, does Johnson & Johnson use 3 concentration technique now? 4 A Not that I'm aware of. 5 Q So they're still using the method, we looked 6 at it briefly, this is 5781, and we'll talk a little 7 bit more about this, but TEM 724? 8 A Correct. 9 Q They're still using pinch off the bit and put 10 it on a scale? 11 A Correct. They're putting it on a scale and 12 diluting it so that your chances of getting the needle 13 on the scale, if it's at very low concentrations, is 14 very low. 15 Q So I want to talk a little bit about what 16 part of this, so have you, you've reviewed this TM 17 7024. Can you tell me, what's its level of detection? 18 A Well, it has a level of detection, it's 19 interesting because they do their level of detection in 20 weight percent. So they say for chrysotile, their 21 level of detection is 1.1 times ten to the minus 14. 22 Q Okay. 23 A Which is, let's see, billions -- 78 -- trillion is 24 10, 11, 12, so that would be in the quad -- that would 25 be in the trillionths of a percent detection limit.</p>
<p style="text-align: right;">79</p> <p>1 was pre-concentrating the minerals first before it went 2 into the XRD. So that he was increasing the 3 sensitivity so that XRD normally cannot detect 0.05 4 percent tremolite unless you concentrate it and then 5 you can get to these higher sensitivities. 6 Q So here it says, "The second technique 7 developed also by Dr. Pooley involves 8 pre-concentration," like we've been talking about, "of 9 tremolite in talc," different procedure following XRD, 10 which is what we just discussed. 11 It says, "This technique has not been written 12 up yet, but evidently when applied to Vermont talc, 13 0.5 -- .05 percent of the tremolite type is found. 14 Limitation of this method is that it may be too 15 sensitive." 16 Dr. Longo, is there any analytical reason you 17 would not want your talc asbestos test to be sensitive? 18 A No. It doesn't make any sense to me to have 19 something you would label as too sensitive for this 20 type of work. We've been working on this now for two 21 years and that's, everything we do in our research in 22 this is to keep lowering the analytical sensitivity. 23 Doesn't make any sense to me. 24 Q If you want to find the asbestos, are you 25 going to use the most sensitive technique you can?</p>	<p style="text-align: right;">81</p> <p>1 And then they say, and the same thing for amphiboles, 2 that it's ten to the minus 14. But it's sort of a 3 switch and bait type thing, because that detection 4 limit is based on finding one made up hypothetical 5 fiber. So that you pick any fiber size you want and 6 then you do a mathematical equation to determine weight 7 'cause you can't weigh one fiber. 8 It's in picograms. So you have micrograms, 9 you have nanograms and then you get to picograms. So 10 it would be milligrams, micrograms, nanograms, 11 picograms. So you have to do a calculation, and the 12 calculation is determining the volume of a cylinder, 13 which is Pi times the length times the width of the 14 cylinder squared, and then you just add in the density. 15 So you're not really ever detecting it. 16 You're just saying if this one fiber was present, this 17 really small individual fiber, this would be my 18 detection limit at weight percent. What they leave out 19 there, in order to find that one fiber you have to have 20 a certain number of fibers in bundles or certain 21 numbers of needles in a haystack to find the one. So 22 it's sort of a made-up detection limit. 23 Q And that's what we're kind of seeing, that's 24 what we're seeing on page 2 here when we talk about 25 limit of quantifiable detection?</p>

21 (Pages 78 to 81)

<p style="text-align: right;">82</p> <p>1 A Correct. If you do the math and calculate the 2 level of detection for that one fiber or bundle, this 3 method is at approximately 12 million fibers or bundles 4 per gram and that's how much you would have to have in 5 the talc in order to find that one theoretical fiber. 6 Q So it says, "Detection of five or more 7 asbestiform minerals of one variety in an analysis 8 constitutes a quantifiable level of detection." So 9 that's what you were just talking about. You have to 10 find five in order to count it? 11 A No. Not really. In order to find one of the five 12 you have to have at least 12 million there. If you're 13 now saying that I have to have five before I'm going to 14 count it, you just take 12 million and multiply by five 15 which gets you in the, let's see, 50, 60, 70, 80 16 million fibers per gram before you're going to say yes, 17 it's quantifiable. 18 That's only for one type. If you have 19 another type of amphibole asbestos in there you need 20 another five to report that. So it's very, you have to 21 have an awful lot of asbestos fibers in there before 22 this method allows you to say yes, it's present. 23 Q Did you actually prepare a little 24 demonstrative for us? 25 A Yes.</p>	<p style="text-align: right;">84</p> <p>1 found in the past, this is the concentrations you would 2 have to have on the right-hand side before that method 3 says it's quantifiable or reported as positive. 4 Q Okay. So just so we're clear, we have four, 5 say, tremolite fibers. That wouldn't -- they would not 6 be counting those under this method? 7 A They would say -- they have to count them. They 8 have to report them. 9 Q Right. 10 A But they would say it's not five so it's not 11 quantifiable. 12 Q And that means that you can end up with 56 13 million fibers and it still not be quantifiable? 14 A In a gram of J&J talcum powder. Correct. 15 Q Same thing if you found, say, four tremolite 16 or four anthophyllite, you could end up with 113 17 million fibers and it's still considered not 18 quantifiable under this method? 19 A Correct. 20 Q Can you tell us a little bit, when it comes 21 to the TEM 7024, about the process of lengths? 22 A Yes. They run a, as I recall, trying to find 23 where it is, they run a -- they call it background 24 correction. 25 Q Okay. Is that what we're looking at on page</p>
<p style="text-align: right;">83</p> <p>1 Q All right. 2 MS. COOPER: Plaintiff's Exhibit 8410. 3 Tender to defense counsel. For demonstrative purposes 4 only, your Honor. 5 MR. DUBIN: No objection to demonstrative 6 purposes. 7 THE COURT: Go right ahead. 8 BY MS. COOPER: 9 Q So again, this was for demonstrative purposes 10 looking at detection of five or more asbestiform 11 materials. Help me understand, what is this chart and 12 what you're trying to explain? 13 A I was trying to explain on the left-hand side in 14 the TEM analysis if you counted in, there are ten grid 15 openings, for tremolite fibers, the amount of tremolite 16 fibers in the actual sample, finding that four, would 17 be 56 million fibers per gram. 18 And they would say that is unquantifiable. 19 Can't count it. Because again, you're looking at a 20 little bit of the material that, all TEM analyses do 21 that. You have to assume it's homogeneous throughout 22 the whole sample that it's going to be the same 23 concentration. 24 And then as you increase the factors of four, 25 and all these types of asbestos have been found and</p>	<p style="text-align: right;">85</p> <p>1 3 here? 2 A No. It's actually -- that's -- yeah. Page 3 of 3 6. 4 Q Okay. So why do you use a blank? 5 A Well, we use a process blank. We do that with 6 every batch of samples we run. So when we're doing the 7 heavy liquid density method, we run a sample just like 8 the one with the talc but without the talc. So it has 9 the heavy liquid in there, it goes through the whole 10 process of spinning it, putting it on a filter, and 11 then we analyze it to make sure there is no cross 12 contamination in our laboratory. We are dealing with 13 very low amounts. 14 And so it's analyzed the exact same way. And 15 all our process blanks for the last, I don't know how 16 many years, have always been negative for asbestos. So 17 that our background is zero. So our analytical 18 sensitivity is one fiber or one bundle. 19 Here we have, I'm saying, in background 20 correction, and they state exactly what they do. 21 Q Okay. And it says, "As of the time of this 22 writing, background correction has not been necessary. 23 The amount of background asbestos detected has been 24 insignificant in comparison to the levels of asbestos 25 found in contaminated samples."</p>

<p style="text-align: right;">86</p> <p>1 Why is that curious?</p> <p>2 A Because the whole point of having at least five</p> <p>3 fibers or five bundles before you say it's quantifiable</p> <p>4 is to take in account, quote, this background</p> <p>5 contamination that must be on a filter.</p> <p>6 So on the one hand if you're contaminating</p> <p>7 your filter with background from the lab, you should</p> <p>8 fix that. But on the other hand, why are you using at</p> <p>9 least five fibers to correct for background when your</p> <p>10 own protocol says background is not negligible, you</p> <p>11 don't have to worry about it. I don't understand that.</p> <p>12 Q So essentially they're saying all these</p> <p>13 fibers that could happen are background, but they're</p> <p>14 not changing and they're saying that it's been</p> <p>15 insignificant?</p> <p>16 A That's what their protocol says.</p> <p>17 Q Why is that a problem?</p> <p>18 A If you're correcting for background and don't have</p> <p>19 any background that means those four fibers has to come</p> <p>20 from the sample itself, not from background that</p> <p>21 doesn't exist. You can't have it both ways. It's</p> <p>22 either there or it's not. If it's not there then</p> <p>23 you're essentially accounting for something that is</p> <p>24 false.</p> <p>25 Q So last thing and then I want to shift back</p>	<p style="text-align: right;">88</p> <p>1 below our detection limit. I don't know how that's</p> <p>2 done.</p> <p>3 Q So if they're just pinching off, again, teeny</p> <p>4 amounts and putting it on this scale, the teeny tiny</p> <p>5 scale, do you believe that there is an amount of</p> <p>6 testing that would actually find the needle that would</p> <p>7 be sufficient?</p> <p>8 A Not by -- I don't know how that's done. I mean,</p> <p>9 we are taking a small amount but we're concentrating</p> <p>10 it. But to do something on that scale with TEM, it's</p> <p>11 unclear to me how you do that.</p> <p>12 Q I'm going to move back to the concentration</p> <p>13 method. So we talked about, we saw that Professor</p> <p>14 Pooley had told them about concentration method. We</p> <p>15 saw that the Colorado School of Mines heard about the</p> <p>16 concentration method or told them about it.</p> <p>17 Have you heard of Professor Blount?</p> <p>18 A I have. Excuse me, I have.</p> <p>19 Q Can you tell me, have you read her article?</p> <p>20 A I have.</p> <p>21 Q Have you relied on her article?</p> <p>22 A I have.</p> <p>23 MS. COOPER: Your Honor, at this time</p> <p>24 plaintiffs offer Plaintiff's Exhibit 60.</p> <p>25 MR. DUBIN: This has already been used as a</p>
<p style="text-align: right;">87</p> <p>1 to concentration method, about this TM 7024. We've</p> <p>2 heard a lot about composite testing, composite samples</p> <p>3 and testing. Do you know how often they were doing TEM</p> <p>4 testing on their talc?</p> <p>5 A I think it was once a quarter.</p> <p>6 Q Okay. So when we hear about every hour,</p> <p>7 every day, every single -- is that TEM testing?</p> <p>8 A No. That's all kinds of tests that they do.</p> <p>9 Microbial, how white the talc is.</p> <p>10 Q Brightness?</p> <p>11 A Brightness. There's other tests they're doing.</p> <p>12 They don't do TEM every hour. That would be</p> <p>13 impossible.</p> <p>14 Q And do you have any opinion on the amount of</p> <p>15 testing done, whether it was sufficient?</p> <p>16 A It's a very hard question to answer. I've thought</p> <p>17 a lot about this because I've been asked about it. How</p> <p>18 do you make a composite that represents tons of</p> <p>19 material? I don't think it's possible. I don't think</p> <p>20 you can test enough to say there's nothing present. I</p> <p>21 don't know how you do that of an entire silo or ton of</p> <p>22 material. Is one sample enough? No. I mean, but what</p> <p>23 is the number of samples? I'm not sure you can</p> <p>24 actually come up to something where somebody can say</p> <p>25 this batch of material, these two tons or one ton is</p>	<p style="text-align: right;">89</p> <p>1 demonstrative. I have no objection to it being used as</p> <p>2 a demonstrative. It's a study. It doesn't go into</p> <p>3 evidence.</p> <p>4 MS. COOPER: Your Honor, we would like to use</p> <p>5 it for all purposes.</p> <p>6 THE COURT: Sidebar.</p> <p>7 (Sidebar.)</p> <p>8 THE COURT: When you say -- I don't know what</p> <p>9 the record picked up. When you say, "all purposes,"</p> <p>10 you're seeking its admission into evidence?</p> <p>11 MS. COOPER: Yes, your Honor.</p> <p>12 THE COURT: The problem is we don't put</p> <p>13 treatises into evidence. We can't expect jurors to</p> <p>14 read through this document. It's beyond their chem. I</p> <p>15 mean, that's why we have the experts here. This is not</p> <p>16 within the jurors to be able to understand everything</p> <p>17 that's in here. There's things objectionable in here</p> <p>18 that have hearsay issues.</p> <p>19 But it's a treatise so you can use it, you</p> <p>20 can certainly go through it with the expert, that's why</p> <p>21 he's here, and explain and show it to this jury on the</p> <p>22 Elmo, but it's not going back to the jury room.</p> <p>23 MS. COOPER: Our issue, our only response</p> <p>24 would be it's going to notice that they had this</p> <p>25 article, that the concentration method was explained</p>

<p style="text-align: right;">90</p> <p>1 and that they were on notice that it could find 2 asbestos. 3 THE COURT: Well, you had their corporate 4 representative here and you asked him about that. But 5 even as to notice, I'm not going to allow that to go 6 back for the jury. 7 MS. COOPER: Yes, your Honor. Thank you. 8 (Sidebar ends.) 9 THE COURT: You can use this document and 10 display it, but it's not being admitted. 11 BY MS. COOPER: 12 Q So, Dr. Longo, you've seen -- this is 13 Plaintiff's Exhibit 60, Dr. Blount's article. And 14 you've seen also, I'm sure, this last page, which we 15 got from, again, the Johnson & Johnson records here 16 where she says that she found Windsor -- she found 17 asbestos in the J&J, JBP. 18 Do you believe that's the Johnson's Baby 19 Powder? 20 A Yes, it is. I believe that. 21 Q Can you explain to me what concentration 22 method she went about testing her sample of Johnson's 23 Baby Powder? 24 A She used and published her results for using the 25 heavy liquid separation concentration method on the</p>	<p style="text-align: right;">92</p> <p>1 They're using water as the liquid where they swirl the 2 small particulates in a pan and keep pouring it off and 3 the gold, because the density stays in the bottom. 4 Her method is what we talked about earlier 5 where she was separating out the talc. If the 6 minerals, the amphibole minerals in the talc, if it's 7 at the concentration you can see, it goes to the bottom 8 of the centrifuge tube. She removed the talc, took out 9 the concentrate and looked at it by polarized light 10 microscopy. Now always be known as the Blount method. 11 Q Her method is taking these two things 12 together, PLM and concentration method? 13 A Yes. Correct. 14 Q This is the Blount method. 15 A That is correct. 16 Q Now, is concentration good for detecting all 17 sorts of fibers? 18 A Not all -- not good for all types of asbestos. 19 Q Okay. 20 A So it's very good for the tremolite solid solution 21 series, it's called, because it's not just tremolite. 22 It's all a type of tremolite, but it's got different 23 names depending if little elements get incorporated to 24 when it's formed. So you have tremolite, actinolite, 25 richterite, winchite. That's all tremolite solid</p>
<p style="text-align: right;">91</p> <p>1 talc samples including Sample I, which was 2 off-the-shelf Johnson's Baby Powder -- 3 MR. DUBIN: I'm going to object to lack of 4 foundation with this witness. 5 THE COURT: Lay the foundation. 6 BY MS. COOPER: 7 Q Dr. Longo, have you read this article? 8 A I have. 9 Q And have you looked at how she went about 10 finding the asbestos that was in the Johnson's Baby 11 Powder? 12 A I have. 13 Q And have you reviewed several documents that 14 she has written and other documents that have relied on 15 her work to come to the opinions that you're expressing 16 today? 17 A Yes. 18 Q So could you, again, could you tell us how 19 her concentration method may have been different than 20 other concentration methods used in the past? 21 A Well, she used a heavy liquid density separation 22 method for minerals. That methodology has been around 23 for ages. It is a typical method for using a liquid to 24 separate different weights of minerals. 25 Panning for gold is a good example of that.</p>	<p style="text-align: right;">93</p> <p>1 solution series. Very good for that. 2 Anthophyllite solid solution series, if it 3 has iron in it it's very good for that. So you can 4 routinely find anthophyllite in their cohorts in the 5 solid solution series. 6 It is very tough to separate chrysotile 7 asbestos from talc because the weights are so close. 8 So it's not good for chrysotile asbestos. If it's in 9 the sample, using these methods you will not find it. 10 Q Okay. So I guess concentration method is 11 harder to find chrysotile, but you mentioned it can 12 find tremolite, actinolite, anthophyllite, correct? 13 A That's correct. 14 Q So are those the kinds of asbestos that are 15 more often in talc mines? 16 A Those types, the amphibole minerals are found the 17 most. So not finding chrysotile, it would be nice to, 18 but the most important to me is the amphibole minerals 19 of the tremolite series and the anthophyllite series. 20 Q Is there other ways to find chrysotile? 21 A There is other ways. You'd have to go back to 22 what I call the long method where you have to increase 23 the amount of grids or increase the PLM analysis. So 24 there is other ways. That's been found in the past. 25 But using either the Blount method or the other, the</p>

<p style="text-align: right;">94</p> <p>1 ISO method for heavy liquid density, it's very tough.</p> <p>2 Heavy liquid density.</p> <p>3 Q So if we know that mines are mainly</p> <p>4 contaminated with these kinds of asbestos, is the</p> <p>5 concentration method a good method to use to find</p> <p>6 asbestos in talc?</p> <p>7 A Yes. I think it's absolutely necessary. Two out</p> <p>8 of three is better than zero out of three.</p> <p>9 Q Dr. Longo, I want to talk to you a little bit</p> <p>10 about what you actually found now. So we're going to</p> <p>11 move down the road. We're going to move down the road</p> <p>12 from good testing to bad testing to actually your</p> <p>13 results.</p> <p>14 So can you tell us, how long have you been</p> <p>15 testing cosmetic talc?</p> <p>16 A A little bit over two years now.</p> <p>17 Q And when you test, can you tell us the kind</p> <p>18 of methods that you use?</p> <p>19 A We're using primarily now polarized light</p> <p>20 microscopy with and without the Blount concentration</p> <p>21 method. We're also analyzing by TEM, using the heavy</p> <p>22 liquid concentration method. And those are the three</p> <p>23 primary techniques that I feel need to be done to</p> <p>24 complete, to characterize these cosmetic talcs for</p> <p>25 asbestos, it's probably the best we have, you know,</p>	<p style="text-align: right;">96</p> <p>1 are exemplars of the containers that were manufactured</p> <p>2 in, I think they go all the way back to the late '40s,</p> <p>3 I think. They're samples of what has been manufactured</p> <p>4 over the years.</p> <p>5 Q So I want to talk to you just about the</p> <p>6 samples that you got from the Johnson & Johnson museum.</p> <p>7 Okay? That's what we're going to talk about today.</p> <p>8 But before I move from that, have the samples</p> <p>9 that you've gotten from plaintiffs' attorneys and eBay</p> <p>10 and clients, have they been consistent, your results</p> <p>11 been consistent with what you found in the historical</p> <p>12 samples that you got from Johnson & Johnson?</p> <p>13 A They are consistent.</p> <p>14 Q Now, you have several reports, so I'm going</p> <p>15 to be using them for demonstrative purposes.</p> <p>16 MS. COOPER: Your Honor, at this time we have</p> <p>17 several reports. It's going to be Plaintiff's Exhibits</p> <p>18 161.8, 161.1, 161.7, 161.1 and 161.9.</p> <p>19 MR. DUBIN: I don't have them, so if they're</p> <p>20 reports I have no objection to their use for</p> <p>21 demonstrative, but I'd like to know what number goes</p> <p>22 with what report.</p> <p>23 MS. COOPER: Absolutely.</p> <p>24 BY MS. COOPER:</p> <p>25 Q Dr. Longo, I'm going to be referencing this</p>
<p style="text-align: right;">95</p> <p>1 it's the best now. You've got to use heavy liquid</p> <p>2 concentration.</p> <p>3 Q So you said PLM and then you said PLM with</p> <p>4 concentration?</p> <p>5 A With heavy liquid density. Also known as the</p> <p>6 Blount method.</p> <p>7 Q And then you said TEM with concentration?</p> <p>8 A Yes. With.</p> <p>9 Q So how many tests have you done?</p> <p>10 A For Johnson & Johnson containers, we're getting</p> <p>11 close to 100 containers.</p> <p>12 Q Okay. And when you were first starting to</p> <p>13 test talc, where were you getting the talc?</p> <p>14 A They were coming to us from plaintiffs' attorneys.</p> <p>15 Either they purchased them on eBay or they got them</p> <p>16 from collectors or they got them from their clients who</p> <p>17 had kept bottles in their house. That's where they</p> <p>18 came from initially.</p> <p>19 Q Initially; now, have you tested other sources</p> <p>20 of talcum powder?</p> <p>21 A We have.</p> <p>22 Q Can you tell me where is the majority of</p> <p>23 samples now have you tested from?</p> <p>24 A They have come from Johnson & Johnson's historical</p> <p>25 museum for keeping what in scientific terms are my area</p>	<p style="text-align: right;">97</p> <p>1 and Mr. Linder here is going to be writing the number</p> <p>2 on these so we can talk about each of these. But I</p> <p>3 want to get just an overview. Okay?</p> <p>4 THE COURT: Why don't we wait until they're</p> <p>5 provided to counsel.</p> <p>6 MS. COOPER: Absolutely, your Honor.</p> <p>7 MR. DUBIN: They don't need to wait for me.</p> <p>8 I'm happy to work with Mr. Linder if it keeps things</p> <p>9 moving.</p> <p>10 THE COURT: Okay. Do these have different</p> <p>11 dates?</p> <p>12 MS. COOPER: Yes, your Honor.</p> <p>13 THE COURT: So for purposes of the record,</p> <p>14 can you review those?</p> <p>15 MS. COOPER: Absolutely.</p> <p>16 THE COURT: Tell me the dates of the reports.</p> <p>17 MS. COOPER: I'll have the November 14, 2018,</p> <p>18 report as 161.8; the January 15, 2019, report as 161.1.</p> <p>19 THE COURT: What was the date of that?</p> <p>20 MS. COOPER: January 15, 2019.</p> <p>21 THE COURT: Thank you.</p> <p>22 MS. COOPER: I'm sorry, that's 161.10</p> <p>23 actually. The February 1st, 2019, report as 161.7; the</p> <p>24 March 11, 2018, report as 161.9; and his January 2018</p> <p>25 report as 161.1.</p>

<p style="text-align: right;">98</p> <p>1 THE COURT: January what?</p> <p>2 MS. COOPER: Sorry. That was January, it's</p> <p>3 just January 2018, your Honor.</p> <p>4 THE COURT: Thank you.</p> <p>5 MR. DUBIN: I'll just note for the record</p> <p>6 again, if they're only displaying for demonstrative</p> <p>7 purposes I'm not sure it matters, but these don't</p> <p>8 appear to be the complete reports.</p> <p>9 MS. COOPER: Your Honor, I have the full</p> <p>10 reports. Just some of them are boxes full.</p> <p>11 MR. DUBIN: And that's fine. Just for the</p> <p>12 record, what is being marked under these numbers are</p> <p>13 not the complete reports. I have no objection to them</p> <p>14 being used to keep things moving.</p> <p>15 THE COURT: That's fine. Continue.</p> <p>16 BY MS. COOPER:</p> <p>17 Q Dr. Longo -- your Honor, may I approach?</p> <p>18 THE COURT: Yes.</p> <p>19 BY MS. COOPER:</p> <p>20 Q I've gotten the beginning parts of each</p> <p>21 report because some of those, I've got in all your</p> <p>22 boxes here, but some of these reports are over 2,000</p> <p>23 pages long. But first, the report, does it give us an</p> <p>24 idea of what your results are?</p> <p>25 A Yes. It has everything except for all the backup</p>	<p style="text-align: right;">100</p> <p>1 samples, did you do 12 samples?</p> <p>2 A 12 historical, yes.</p> <p>3 Q And then you found five positives in Italian</p> <p>4 samples. Is that correct?</p> <p>5 A That is correct.</p> <p>6 Q A percentage of 42 percent from the Italian</p> <p>7 mine?</p> <p>8 A Yes.</p> <p>9 Q With Vermont you did 36 Vermont samples?</p> <p>10 A Correct.</p> <p>11 Q And you told me that you found 32 of them</p> <p>12 positive for asbestos, and that's 89 percent. Is that</p> <p>13 correct?</p> <p>14 A That is correct.</p> <p>15 Q So first of all, can you tell me, when we</p> <p>16 find positives like this, what kind of concentrations</p> <p>17 are we finding in the Johnson & Johnson Baby Powder</p> <p>18 that you tested?</p> <p>19 A Depends on the technique. For optical microscopy</p> <p>20 or PLM, I think the highest concentration we found was</p> <p>21 approximately .2 to .3 percent, to the lowest it was</p> <p>22 less than 0.1 percent. And for the TEM analysis it was</p> <p>23 a range of approximately five or 6,000 fibers per gram</p> <p>24 or fibers in bundles, and that's finding one fiber.</p> <p>25 Q I'm sorry, could you repeat that? That was</p>
<p style="text-align: right;">99</p> <p>1 data. So the answer is yes.</p> <p>2 Q So I want to talk to you about the historical</p> <p>3 samples that you got from Johnson & Johnson. Can you</p> <p>4 first tell me how many samples total that you tested?</p> <p>5 A So far to date our historical J&J samples is</p> <p>6 approximately -- is 57, we call containers. That's how</p> <p>7 we started. We got samples from those containers. But</p> <p>8 57 containers.</p> <p>9 Q Can you tell me, of these 57 containers, how</p> <p>10 many were actually positive for asbestos? And actually</p> <p>11 Dr. Longo, spoiler, you filled out that information for</p> <p>12 me yesterday?</p> <p>13 A Yes.</p> <p>14 Q So looking at that, there are 42 of them</p> <p>15 positive?</p> <p>16 A Correct.</p> <p>17 Q And you calculated that for me to be 74</p> <p>18 percent were positive for asbestos?</p> <p>19 A Correct.</p> <p>20 Q Now, we heard from Dr. Hopkins about the fact</p> <p>21 that Mr. Rimondi was exposed to both Italian and</p> <p>22 Vermont mine sources.</p> <p>23 A That is correct.</p> <p>24 Q So I had you separate out your Italian</p> <p>25 samples from your Vermont samples. So for Italian</p>	<p style="text-align: right;">101</p> <p>1 for the TEM analysis, how many was it?</p> <p>2 A On the lower side, the concentration ranged from</p> <p>3 approximately 7,000 or so fibers or bundles per gram.</p> <p>4 Q You said fibers/bundles.</p> <p>5 A And I just want to get the number straight so I'll</p> <p>6 look at the results here in the front of the report.</p> <p>7 Oh, I should have looked initially. On the</p> <p>8 lower side it was 4,370.</p> <p>9 Q Okay. On the lower side, are we talking</p> <p>10 about TEM?</p> <p>11 A TEM.</p> <p>12 Q Could you say that number one more time?</p> <p>13 A 4,370 fibers per gram.</p> <p>14 Q Okay.</p> <p>15 A Up to 268,000 fibers and bundles per gram.</p> <p>16 Q 200 --</p> <p>17 A 268,000.</p> <p>18 Q Is it different when you did it by PLM?</p> <p>19 A Well, PLM is in weight percent. So the PLM is</p> <p>20 looking at a different population of asbestos bundles</p> <p>21 than TEM looks at. And it's all by weight percent. So</p> <p>22 PLM was, from a less than .1 up to about .2, .3 weight</p> <p>23 percent.</p> <p>24 Q I mean, we're talking about thousands on</p> <p>25 thousands of fibers per bundle in a gram, I mean, do we</p>

<p style="text-align: right;">102</p> <p>1 have any idea how much would be in something this kind</p> <p>2 of size?</p> <p>3 A That is -- how big is that, 14-ounce?</p> <p>4 Q This is a 22-ounce.</p> <p>5 A 22-ounce. Say you take the average of all 57</p> <p>6 containers by TEM and even average in the zeros you may</p> <p>7 have approximately 10,000 fibers and bundles per gram.</p> <p>8 And there is 28 grams to an ounce. So just on the</p> <p>9 lower end, say it's 7,000 per gram times 28 gives you</p> <p>10 ounces. Did you say 22?</p> <p>11 Q Yes. 22-ounce.</p> <p>12 A So in the bottle would be approximately four</p> <p>13 million asbestos fibers and bundles. If the 268,000 on</p> <p>14 the high side -- on the other end of the side times 28</p> <p>15 times 22, that's 165,000 fibers and bundles per gram.</p> <p>16 Q Okay.</p> <p>17 A I mean, not a gram, but in a bottle of a 22-ounce.</p> <p>18 Q Okay. I'm sorry. Did you say four million</p> <p>19 in fibers and bundles per gram? I'm confused as to</p> <p>20 what you just --</p> <p>21 A It's 165 million fibers and bundles in a 22-ounce</p> <p>22 bottle.</p> <p>23 Q Okay. That's what I was trying to</p> <p>24 understand.</p> <p>25 So even though we're talking about maybe a</p>	<p style="text-align: right;">104</p> <p>1 MR. DUBIN: Okay. Then I have no objection</p> <p>2 to these for demonstrative purposes.</p> <p>3 THE COURT: Proceed.</p> <p>4 MS. COOPER: If I can get those back?</p> <p>5 MR. DUBIN: Okay. Can I have them back when</p> <p>6 you're done, please?</p> <p>7 BY MS. COOPER:</p> <p>8 Q First, looking at 161.10 A. Can you first</p> <p>9 tell me what this is?</p> <p>10 A That's a nine-ounce bottle of Johnson's Baby</p> <p>11 Powder.</p> <p>12 Q Is this one of the historical samples that</p> <p>13 you got from Johnson & Johnson?</p> <p>14 A Yes, but not the container. The container never</p> <p>15 came to our laboratory. These samples were split in a</p> <p>16 laboratory up here in New Jersey that Johnson & Johnson</p> <p>17 uses to split the samples and then we got a sample out</p> <p>18 of that container.</p> <p>19 Q Can you tell me, looking at 161.10 B, what is</p> <p>20 this?</p> <p>21 A That's a TEM analysis of anthophyllite. It's</p> <p>22 really the anthophyllite solid solution series. That's</p> <p>23 an anthophyllite fiber starting in kind of the, I'd say</p> <p>24 at the, maybe the 10:30 position down to the 5 o'clock</p> <p>25 position. That is a fiber that is 14.4 micrometers</p>
<p style="text-align: right;">103</p> <p>1 low concentration of a whole bottle, we're talking</p> <p>2 about millions and billions of fibers coming -- being</p> <p>3 in just one bottle?</p> <p>4 A For these results, for 22 ounces, it would be in</p> <p>5 the millions, hundreds of millions.</p> <p>6 Q And are you able to detect, we talk about</p> <p>7 millions and millions of fibers, are you able to see</p> <p>8 that with a naked eye?</p> <p>9 A No. You can't see any of these with the naked</p> <p>10 eye. Not by the PLM, which is the very largest</p> <p>11 bundles, 100, 200 micrometers in length. If you could</p> <p>12 see it, you still wouldn't know what it is because it's</p> <p>13 in the product.</p> <p>14 Q Did you actually, were you able to take</p> <p>15 pictures of the fibers and bundles you were finding?</p> <p>16 A Yes.</p> <p>17 MS. COOPER: Your Honor, this is -- your</p> <p>18 Honor, I'll go ahead and mark these for demonstrative</p> <p>19 purposes. These are from his -- this would be from</p> <p>20 161.110. And I'll go ahead and mark them as 161.10 A,</p> <p>21 B, C, and D. And I'm going to tender these to defense</p> <p>22 counsel for examination.</p> <p>23 MR. DUBIN: Is there a report?</p> <p>24 MS. COOPER: Yes. They're images out of</p> <p>25 161.10.</p>	<p style="text-align: right;">105</p> <p>1 long, .4 micrometers wide, I believe. I'd have to -- I</p> <p>2 believe it's a single fiber. I'd have to really look</p> <p>3 at the photograph in the report or -- it has an aspect</p> <p>4 ratio of approximately 33-to-1. And it is using the</p> <p>5 counting rules that we use, which are greater than .5</p> <p>6 micrometers in length, and this is for regulated</p> <p>7 asbestos of all the TEM protocol.</p> <p>8 So, is it greater than .5 micrometers in</p> <p>9 length? Yes. It's 13.4. Greater than or equal. Does</p> <p>10 it have substantially parallel sides going down the</p> <p>11 length of the fiber? Yes. Does it have an aspect</p> <p>12 ratio greater than or equal to 5-to-1, meaning the</p> <p>13 length divided by the width? Yes. It is 33-to-1.</p> <p>14 By our counting -- not our counting rules, by</p> <p>15 the counting rules by the Environmental Protection</p> <p>16 Agency, the American Society of Testing Materials, the</p> <p>17 International Standards Organization for TEM analysis</p> <p>18 says that is reported as a regulated asbestos fiber.</p> <p>19 Q In other words, I'm going to go back to</p> <p>20 testing 101. What do you mean when you say regulated</p> <p>21 asbestos fiber?</p> <p>22 A It means that when we do this analysis, say an air</p> <p>23 sample comes in and has been collected in a building</p> <p>24 where they have removed asbestos, but now they want us</p> <p>25 to measure to see that the air is clean so people can</p>

106	108
<p>1 go back in there. We follow the protocols that say if 2 you analyze this, you have to -- you have to call it 3 regulated asbestos if it meets this criteria. That's 4 the protocol or method we're using. That's what we get 5 audited on. You can't say I'm using this method, but 6 I'm using some other counting rules and I got to 7 determine if it's asbestiform or non-asbestiform. It's 8 the counting rules. It's what you have to report. 9 That, what we had up there, would be reported 10 as regulated asbestos, and we would put it on our count 11 sheet and we would put how many fibers of cc of air 12 that represents. 13 Q Now, I have a few other pictures. 161.10 C; 14 can you tell me, is that a different anthophyllite 15 fiber? 16 A It is. I think that's a single fiber. And it's, 17 again, it's anthophyllite, using the governmental ASTM 18 ISO counting rules, 7.5 micrometers, so it's greater 19 than or equal in length to .5 micrometers, or microns; 20 and it's the width of .2, so does it have an aspect 21 ratio greater than 5-to-1, greater than or equal to 22 5-to-1? I can tell you it does by looking at it. And 23 7.5 divided by .2, it has an aspect ratio of 37.5-to-1. 24 But you also will have ones that are much 25 lower. But each and every one of them will be meeting</p>	<p>1 looking at the crystalline, the crystalline diffraction 2 patterns to make sure it has the right crystalline 3 structure for regulated asbestos. 4 Q Now, we talked a little bit about -- 5 MR. DUBIN: I'm sorry, can I have those 6 pictures now? 7 MS. COOPER: Sure. 8 MR. DUBIN: Do you have the identification of 9 which pages of the report these are on? 10 MS. COOPER: We can get that. 11 BY MS. COOPER: 12 Q So we talked a little bit about your results. 13 I want to talk to you a little bit about, and going 14 back to our testing 101, the idea of a non-detect. 15 Some of these are positive, but some of them aren't. 16 Can you tell us what does it mean that it's 17 non-detect? 18 A Simply that. When you did the analysis you did 19 not detect any asbestos, not one fiber. So you 20 reported as non-detected. You can't report it as zero 21 and you can't report it as there's probably some there, 22 I just didn't find it. Alls you can say is it's not 23 detectable. 24 Q Even on the ones you didn't find the positive 25 doesn't necessarily mean there's no asbestos?</p>
107	109
<p>1 the regulated asbestos definition for what we have to 2 count when we use these protocols. We really don't 3 have a lot of leeway in it if you say you're going to 4 use these methods. 5 Q Last picture, Dr. Longo, because I want to 6 show different kind of shapes and sizes here. We're 7 looking at 161.10 D. Can you tell us a little bit 8 about this anthophyllite fiber? 9 A That would be more -- 10 Q I'm sorry, I said fiber but I actually don't 11 know. 12 A Again, we're looking at pictures off it. The 13 analyst, the microscopist makes the decision. Some of 14 these bundles are obvious. They look like they have 15 wires sticking out the end of it. But to be a bundle 16 it has to have multiple fibers, typically, depending on 17 the protocol, at least two or three, that are touching 18 and all going in the same direction. But the 19 microscopist makes the final decision. It's just that 20 these photographs are not as good. 21 So again, in this particular case it has an 22 aspect ratio of about 10-to-1 and meets the definition 23 of counting rules, plus besides this we're doing an 24 analysis where we check the micro chemistry to see if 25 it matches a particular type of asbestos. We're</p>	<p>1 A Alls you can say, scientifically it's non-detect. 2 You can't say there's nothing there, that it's clean. 3 You can only go to your analytical sensitivity. So if 4 there was 2,000 fibers per gram of bundle and our 5 analytical sensitivity is 4,000 grams, we're not going 6 to detect it. 7 But on the same token, to be fair, you can't 8 say it's 2,000, all you can say it's below our 9 detection limit. You can't say it's not there and you 10 can't say it's there. 11 Q Dr. Longo, I want to move us a little bit 12 down the road because I am trying to get you out of 13 here as soon as we can. We're going to move from your 14 test results now to something I call the name game. 15 So we talked a little about the definition of 16 a regulated fiber. Can you first tell us what is -- 17 we've heard the word asbestiform. When we say 18 something is asbestiform, what does that mean? 19 A It's a definition that states that the mineral has 20 formed like asbestos. It's fibrous. And that's truly 21 just the definition. It just forms like asbestos. 22 Q Well, what does it have to be or what do you 23 mean when you say that something is asbestos? 24 A We say it's asbestos because we are following the 25 method that gives you the definitions of what you</p>

28 (Pages 106 to 109)

<p style="text-align: right;">110</p> <p>1 report as asbestos. The fiber length, the fiber width, 2 the chemistry as you get into it; obviously, after it's 3 a fiber you have to say yes, it's asbestos or no, it's 4 not, it's something else; fibrous talc, antigorite or 5 some other mineral.</p> <p>6 Q So you talk about standards for you to be 7 able to count. What standards are you using?</p> <p>8 A For TEM, for PLM we're using the International 9 Standards Organization 22262-1 for PLM, no heavy liquid 10 method. For the heavy liquid density method we're 11 using the Blount method that she published in 1991. 12 So, and we're using the counting rules of what you call 13 asbestos in the ISO 22262-1. They have specific things 14 that they say in order to call it asbestiform, these 15 are the things that you have to have.</p> <p>16 By transmission electron microscopy there is 17 a number of methods. There's the Environmental 18 Protection Agency, AHERA, A-H-E-R-A, Asbestos Hazard 19 Emergency Response Act that has a TEM method in the 20 back that you have to use if a school is being cleared, 21 so kids can go back in after they have removed 22 asbestos. That has the counting rules we just talked 23 about; greater than or equal to .5, parallel sides, 24 5-to-1 aspect ratio and asbestos. 25 It's also the same method that the</p>	<p style="text-align: right;">112</p> <p>1 BY MS. COOPER:</p> <p>2 Q So, Dr. Longo, I'm going to hand you 3 Plaintiff's Exhibit 936. Can you tell me what that is?</p> <p>4 A This is the Environmental Protection Agency Part 5 763 Asbestos, which is part of the AHERA, emergency 6 response -- the Asbestos Emergency Response Act. And 7 it has to do with what you have to do to analyze for 8 asbestos, both polarized light microscopy if you do 9 that or transmission electron microscopy for air 10 samples.</p> <p>11 Q So I want to turn your attention to page 876. 12 And I'm actually going to put it up here on the screen 13 as well.</p> <p>14 So, you mentioned that there is a definition 15 for asbestiform in here and we see here that it says, 16 "A specific type of mineral fibrosity in which the 17 fibers and fibrils possess high tensile strength and 18 flexibility."</p> <p>19 So, Dr. Longo, how do you count something 20 like that?</p> <p>21 A Well, you can't. It's just a general definition. 22 You know, how do you determine high tensile strength? 23 It's impossible with a polarized microscope or a 24 transmission electron microscope. And what's the 25 definition of high tensile strength?</p>
<p style="text-align: right;">111</p> <p>1 International Standards Organization uses for their TEM 2 method. They have two of them. The fiber is designed 3 exactly what I just said about EPA; same length, same 4 aspect ratio, same everything.</p> <p>5 American Society of Testing Materials has 6 three TEM methods on the books right now -- no, four. 7 They all use that method. They all say if it's this, 8 you count it as asbestos and report it. It's not our 9 counting rules. It's ASTM, International Standards 10 Organization, the EPA; it's the same counting rules. 11 It's fairly straightforward.</p> <p>12 Q Okay. I have a few of these, but I'm just 13 going to show us one of them.</p> <p>14 So you mentioned EPA, ASTM, all these 15 standards that you reference to figure out if something 16 is this regulated asbestos fiber.</p> <p>17 So, your Honor, at this time we're going to 18 be offering for demonstrative purposes Plaintiff's 19 Exhibit 936. Tender to defense counsel for 20 examination.</p> <p>21 MR. DUBIN: This is AHERA? No objection to 22 the use for demonstrative purposes.</p> <p>23 THE COURT: Okay. Proceed.</p> <p>24 MS. COOPER: Your Honor, may I approach?</p> <p>25 THE COURT: Yes.</p>	<p style="text-align: right;">113</p> <p>1 So these are general definitions. What 2 they're asking you to do are flexibility. How do you 3 determine flexibility on a fiber or bundle that is 4 microns in size that you can't even see with a naked 5 eye? There is no test for that.</p> <p>6 And these tests are very specific. You're 7 analyzing regulated asbestos. There's nothing in this 8 earth, there's no analytical scientific equipment that 9 can take single microscopic fibers and measure high 10 tensile strength that's not defined or flexibility 11 that's not defined. And every one of the methods will 12 have this.</p> <p>13 But then if you go down to what a fiber is, 14 they don't define that as high tensile strength or has 15 to have flexibility. They just say here it is, 16 structure greater than or equal to five micrometers in 17 length with an aspect ratio length to width of 5-to-1 18 or greater and having substantially parallel sides. 19 Every TEM method has this.</p> <p>20 Q Okay. So when you're counting it, you're 21 using fiber, whether or not it meets this definition. 22 That's why we call it a regulated fiber. And is that 23 exactly what you did when you were calculating your 24 results?</p> <p>25 A Yes.</p>

<p style="text-align: right;">114</p> <p>1 Q Can you tell us, if you have a single fiber</p> <p>2 can you tell if it's asbestiform?</p> <p>3 A Well, it meets the definition of asbestiform, but</p> <p>4 if you have a cleavage fragment that has the</p> <p>5 possibility of shattering or you'll have parallel sides</p> <p>6 in the TEM, it will look, 'cause TEM is two dimensions</p> <p>7 It will look like a fiber. And if you're doing it in a</p> <p>8 vacuum, you have absolutely no information about where</p> <p>9 the sample came from, the type of material it is you're</p> <p>10 analyzing, other test reports that have been done in</p> <p>11 the past, and you walk in and you know nothing about</p> <p>12 it, you don't know anything about the single fiber</p> <p>13 other than what you're looking at in the TEM, and it is</p> <p>14 asbestos, I mean, it does meet the definitions per</p> <p>15 chemistry and everything, the only thing you can say is</p> <p>16 that it is a regulated asbestos fiber. I can't tell</p> <p>17 you if it's asbestiform or not without more information</p> <p>18 about the entirety of where this came from. That is a</p> <p>19 true statement.</p> <p>20 Q Do you have more information than a single</p> <p>21 fiber, though?</p> <p>22 A Yes.</p> <p>23 Q You've tested, you said, 109 samples?</p> <p>24 A In total, it's -- for containers it's close for --</p> <p>25 out of these two mines -- three mines, actually, we</p>	<p style="text-align: right;">116</p> <p>1 THE COURT: What's the nature of the</p> <p>2 objection?</p> <p>3 MR. DUBIN: She's talking about how these</p> <p>4 minerals occurred in nature. I think this is leading</p> <p>5 into where she was in the opening about the idea this</p> <p>6 is a mistake, you'll find these metals together.</p> <p>7 That's all the province of a geologist or mineralogist</p> <p>8 which he is not. He's able to come and talk about what</p> <p>9 he's tested and in terms of his model testing, but he</p> <p>10 is not going to be talking about whether they occur</p> <p>11 together in nature. That's not his field of expertise.</p> <p>12 MS. COOPER: And, your Honor, he's reviewed</p> <p>13 several mineral -- mine articles and he has studied</p> <p>14 these fibers. He's talked about asbestiform and</p> <p>15 non-asbestiform. He has years of looking at this very</p> <p>16 issue. I think that he can say, based on his</p> <p>17 experience and things he reviewed, whether he knows</p> <p>18 that asbestiform and non-asbestiform occur in nature.</p> <p>19 THE COURT: I'll allow it if you lay a</p> <p>20 foundation. Certainly he does not need to be a</p> <p>21 geologist. But if by reading articles that are, you</p> <p>22 know, or anything of that nature that establishes his</p> <p>23 understanding, I'll allow him to testify. But you need</p> <p>24 to lay the foundation, which you have not.</p> <p>25 MR. DUBIN: Just one thing, your Honor. I</p>
<p style="text-align: right;">115</p> <p>1 have tested hundreds of individual fibers and bundles.</p> <p>2 So we have a population of what we're seeing.</p> <p>3 Now, population is not defined in any of</p> <p>4 these methods. They say you have to have a population.</p> <p>5 If you want to go with the basic statistics, population</p> <p>6 is two or more. But we have hundreds and hundreds</p> <p>7 where they meet all these definitions. Not the high</p> <p>8 tensile strength and stuff because that doesn't exist.</p> <p>9 Where they're bundles in there and we have information</p> <p>10 from other testing that says it's asbestos.</p> <p>11 So no, my opinion is it's all asbestiform.</p> <p>12 But in a vacuum, a single fiber in it -- a two</p> <p>13 dimensional and it has parallel sides, you don't know</p> <p>14 anything else about the sample, yes, you could not say</p> <p>15 it's asbestiform or not.</p> <p>16 Q Last point about this whole name game and</p> <p>17 then I finally want to get to Mr. Rimondi's exposure.</p> <p>18 Okay?</p> <p>19 So first of all, on this asbestiform versus</p> <p>20 non-asbestiform name game debate, is it true that</p> <p>21 asbestiform and non-asbestiform actually occur in</p> <p>22 nature?</p> <p>23 MR. DUBIN: Objection.</p> <p>24 THE COURT: Sidebar.</p> <p>25 (Sidebar.)</p>	<p style="text-align: right;">117</p> <p>1 mean, I've read the articles. That doesn't make me</p> <p>2 competent to be a witness on geology in a courtroom.</p> <p>3 And so if the foundation is just that he's read the</p> <p>4 articles, I'm going to object.</p> <p>5 THE COURT: Well, you're an attorney and he's</p> <p>6 not an attorney. I will allow you to lay a foundation.</p> <p>7 You're not on the witness stand. Okay?</p> <p>8 While we're here, I take it you're trying to</p> <p>9 find the original photographs from --</p> <p>10 MR. DUBIN: Thousands of pages. I'm trying</p> <p>11 to do my best.</p> <p>12 THE COURT: I understand. Are you going to</p> <p>13 be using any more pictures?</p> <p>14 MS. COOPER: No. These are the ones -- I can</p> <p>15 actually make a copy and also get him the page numbers.</p> <p>16 THE COURT: I want counsel to have that</p> <p>17 before cross-examination.</p> <p>18 MS. COOPER: Absolutely.</p> <p>19 THE COURT: After this one section we'll take</p> <p>20 a break, lunch break, before you get to the last</p> <p>21 section of your roadmap.</p> <p>22 MS. COOPER: Absolutely, your Honor.</p> <p>23 THE COURT: Don't forget to lay your</p> <p>24 foundation.</p> <p>25 MS. COOPER: Yes, your Honor.</p>

<p style="text-align: right;">118</p> <p>1 THE COURT: Thank you.</p> <p>2 (Sidebar ends.)</p> <p>3 BY MS. COOPER:</p> <p>4 Q So, Dr. Longo, you were talking about</p> <p>5 asbestiform versus non-asbestiform. Have you reviewed</p> <p>6 articles about that very topic?</p> <p>7 A I have.</p> <p>8 Q Can you tell me a little bit about that?</p> <p>9 A There's a number of articles out there. Ann Wylie</p> <p>10 has written articles about asbestiform and</p> <p>11 non-asbestiform. Campbell has asbestiform and</p> <p>12 non-asbestiform. And it has to do more of the</p> <p>13 structure and the fragments and you can't take</p> <p>14 non-asbestiform and break it and make asbestos and that</p> <p>15 type of thing. So there's a number of different</p> <p>16 articles out there.</p> <p>17 Q Have you also reviewed internal J&J documents</p> <p>18 about the asbestiform and non-asbestiform debate?</p> <p>19 A No. Not too much in the early years. They may</p> <p>20 have some later ones, but I don't recall going through</p> <p>21 that.</p> <p>22 Q As part of your expertise is it required that</p> <p>23 you look into articles about whether something is</p> <p>24 asbestiform or non-asbestiform and also just how those</p> <p>25 minerals that you are reviewing occur in nature?</p>	<p style="text-align: right;">120</p> <p>1 Q When we're talking about what's a regulated</p> <p>2 fiber, what you will count and what AHERA, so the EPA,</p> <p>3 what the EPA is going to count, are we using public</p> <p>4 health definitions, are we using geological</p> <p>5 definitions?</p> <p>6 A They're primarily health-based definitions for</p> <p>7 what those counting regulations have been for years and</p> <p>8 years. Go back to the '90s and '80s. That's what you</p> <p>9 use. We're certified to do that. If you're going to</p> <p>10 use another definition, you can't say you used that</p> <p>11 protocol unless you say well, we used this protocol but</p> <p>12 we changed it to have different definitions of what</p> <p>13 you're doing. And as long as you acknowledge that, you</p> <p>14 can do that.</p> <p>15 But you can't say this air sample has been</p> <p>16 done according to the National Voluntary Laboratory</p> <p>17 Accreditation Program with their stamp on it and you</p> <p>18 change something in the counting rules or protocols so</p> <p>19 that you're not doing what they say you should be</p> <p>20 doing, and you don't want the auditor to find those</p> <p>21 kind of reports. You have to do, especially if you</p> <p>22 have their logo from that certification on your report.</p> <p>23 MS. COOPER: Your Honor, I think that's a</p> <p>24 good stopping point.</p> <p>25 THE COURT: Thanks.</p>
<p style="text-align: right;">119</p> <p>1 A Yes.</p> <p>2 Q So can you tell us, do non-asbestiform and</p> <p>3 asbestiform amphiboles occur in nature together?</p> <p>4 A Yes.</p> <p>5 Q And is that in the mines they're occurring</p> <p>6 together?</p> <p>7 A Yes.</p> <p>8 Q And these geological terms of asbestiform and</p> <p>9 non-asbestiform --</p> <p>10 MR. DUBIN: Again, objection.</p> <p>11 THE COURT: Objection is overruled. Can you</p> <p>12 finish your question?</p> <p>13 BY MS. COOPER:</p> <p>14 Q As far as geological terms of asbestiform or</p> <p>15 non-asbestiform, are they using public health</p> <p>16 definitions or are they using geological definitions?</p> <p>17 A It's geological definitions. It really has to do</p> <p>18 with especially the high tensile strength and</p> <p>19 flexibility and how valuable the asbestos is in a</p> <p>20 particular mine where they're mining asbestos. They're</p> <p>21 more fibrous, the more flexible, the higher amount you</p> <p>22 can charge, if you're digging it out of the ground,</p> <p>23 what a ton costs. That's where that all comes from.</p> <p>24 Because these definitions have really been used a lot</p> <p>25 in commercially added asbestos products.</p>	<p style="text-align: right;">121</p> <p>1 Members of the jury, we'll take the lunch</p> <p>2 break now. Leave your notebooks here. Remember to</p> <p>3 wear your juror badges where they are visible.</p> <p>4 Recall all the instructions I've been</p> <p>5 providing to you during the course of this trial:</p> <p>6 Please, no research of any kind whatsoever. Do not</p> <p>7 discuss this case even amongst yourselves, including</p> <p>8 the testimony that you just heard. Thank you.</p> <p>9 Enjoy your lunch. Be ready to come back</p> <p>10 upstairs at 1:35.</p> <p>11 (Jury exits.)</p> <p>12 THE COURT: And we're off the record.</p> <p>13 Dr. Longo, you may step down.</p> <p>14 THE WITNESS: Thank you, your Honor.</p> <p>15 (Luncheon recess: 12:27 p.m. to 1:41 p.m.)</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>

<p style="text-align: right;">122</p> <p>1 AFTERNOON SESSION</p> <p>2 COURT OFFICER: Jury's entering.</p> <p>3 THE COURT: Jury entering.</p> <p>4 (Jury enters.)</p> <p>5 THE COURT: Please be seated. Make sure cell</p> <p>6 phones are turned off.</p> <p>7 Miss Cooper, whenever you're ready.</p> <p>8 MS. COOPER: Ercilyn, if I can get the Elmo?</p> <p>9 Thank you so much.</p> <p>10 BY MS. COOPER:</p> <p>11 Q Welcome back, members of the jury and</p> <p>12 Dr. Longo.</p> <p>13 A Thank you.</p> <p>14 Q Just clarifying a few things before we keep</p> <p>15 moving down our road. Okay? So first of all, we</p> <p>16 talked about the concentration method. Got my tongue</p> <p>17 tied today. We talked about the concentration method</p> <p>18 and we talked about the TEM method that J&J was using.</p> <p>19 With the way that the concentration method</p> <p>20 works, can you actually test a whole lot more talc by</p> <p>21 using the concentration method?</p> <p>22 A Yes. You can. That's correct.</p> <p>23 Q Is that true because the TEM method J&J was</p> <p>24 using, was that pinching off little bits to be</p> <p>25 measured?</p>	<p style="text-align: right;">124</p> <p>1 BY MS. COOPER:</p> <p>2 Q Do you know if, by volume, or do you know by</p> <p>3 volume how much talc you've tested, Dr. Longo?</p> <p>4 A Yes. Not by volume, by weight.</p> <p>5 Q I'm sorry. By weight. Do you know that if</p> <p>6 you were using this TEM method that Johnson & Johnson</p> <p>7 was using, if they're able to test as much as you have</p> <p>8 tested?</p> <p>9 A Not in the number of samples that we've tested.</p> <p>10 No. They would have to have a lot more TEMs than what</p> <p>11 we did for the same amount.</p> <p>12 Q And Johnson & Johnson, you said that they</p> <p>13 have known about this method since the '70s, and we saw</p> <p>14 a couple of documents. We saw that needle in the</p> <p>15 haystack, Colorado School of Mines told them. And for</p> <p>16 the record, that was 1973. And then you talked about</p> <p>17 how Pooley had told them and they said it was too</p> <p>18 sensitive.</p> <p>19 A I'm not --</p> <p>20 Q Sorry.</p> <p>21 A I'm not sure Dr. Pooley said it was too sensitive.</p> <p>22 Q Okay.</p> <p>23 A I think that was Johnson & Johnson.</p> <p>24 Q Okay. Sorry. That's a good clarification.</p> <p>25 And that was in 1973?</p>
<p style="text-align: right;">123</p> <p>1 A Yes. They actually start with the same amount,</p> <p>2 but because you have a problem of overloading the</p> <p>3 sample with too much talc, they have to dilute it a</p> <p>4 fair amount and that's the difference. We start with</p> <p>5 about the same amount in the concentration method, but</p> <p>6 we don't have to dilute it after removing the talc so</p> <p>7 we're essentially testing the entire amount.</p> <p>8 Q So instead of just testing a tiny sample and</p> <p>9 diluting that, you're being able to test the entire</p> <p>10 bulk of the talc?</p> <p>11 A Not the entire bulk, but both methods start with</p> <p>12 about 30 to 40, sometimes 50 milligrams. On the one</p> <p>13 side if you don't use the concentration method you have</p> <p>14 to spread that out. You dilute it. You just add more</p> <p>15 water to it or more solution. On the other hand with</p> <p>16 the concentration method, you can use the whole 30, 40,</p> <p>17 50 milligrams and that allows you to separate out the</p> <p>18 majority of that, and then allows you to just harvest</p> <p>19 the amphibole minerals that are present.</p> <p>20 Q So in the two years that you've been testing</p> <p>21 with concentration method, have you tested much more</p> <p>22 than J&J?</p> <p>23 MR. DUBIN: Objection. Lacks foundation.</p> <p>24 THE COURT: Sustained. Don't answer that</p> <p>25 question.</p>	<p style="text-align: right;">125</p> <p>1 A Correct.</p> <p>2 Q Okay. So let's get back to down the road.</p> <p>3 MR. DUBIN: I'm going to object. That was</p> <p>4 just testimony from counsel. Move to strike.</p> <p>5 THE COURT: That portion indicated by Miss</p> <p>6 Cooper relative to sensitivity and who said it is</p> <p>7 stricken from the record. You are not to consider it.</p> <p>8 BY MS. COOPER:</p> <p>9 Q Getting back down the road, I want to talk to</p> <p>10 you about Mr. Rimondi's exposure.</p> <p>11 First of all, what have you reviewed in</p> <p>12 regards to Mr. Rimondi specifically?</p> <p>13 A I reviewed Mr. Rimondi's two volumes of</p> <p>14 deposition. One was on August 15, 2017, and the next</p> <p>15 one was on August 23rd of 2017. I reviewed the</p> <p>16 deposition of Mr. Ricardo Rimondi Junior, his son;</p> <p>17 deposition that was on October 20 of 2017, and I</p> <p>18 reviewed Pilar Rimondi's deposition who was at some</p> <p>19 point his wife. And then I reviewed the aunt's</p> <p>20 deposition, Emma Pantle, Pantlely, I think it is, her</p> <p>21 October 12, '17 deposition where she discussed about</p> <p>22 she took care of Ricardo from when he was six months to</p> <p>23 six years old and talked about how diaper changes and</p> <p>24 baths through that time frame, two-and-a-half years</p> <p>25 approximately or two years for diaper change and then</p>

<p style="text-align: right;">126</p> <p>1 baths all the way through, and her use of Johnson's</p> <p>2 Baby Powder during both bathing and changing diapers.</p> <p>3 Q So there's no confusion, did you test talc or</p> <p>4 Johnson & Johnson Baby Powder from Mr. Rimondi</p> <p>5 specifically?</p> <p>6 A No. We did not.</p> <p>7 Q But we've heard from Dr. Hopkins about the</p> <p>8 different mines that were used, Italian, Vermont, and</p> <p>9 Hammondsville, Argonaut. Have you tested these mines?</p> <p>10 A We have tested products that were manufactured</p> <p>11 where those mines were used; the Val Chisone mine in</p> <p>12 Italy; the Vermont mines, which are a number of them,</p> <p>13 Hammondsville, Rainbow, Argonaut, Hamm, and they're all</p> <p>14 from the Vermont area. So we have tested and we've</p> <p>15 tested samples from China.</p> <p>16 Q And when we talked about the positive in the</p> <p>17 samples that you found, can you tell me what years that</p> <p>18 you sampled?</p> <p>19 A Well, the samples that we received from, from the</p> <p>20 historical museum from Johnson & Johnson is samples</p> <p>21 that go from approximately -- well, go from 1960</p> <p>22 through the '60s, 1970s through the '70s, 1980s through</p> <p>23 the '80s, and two samples from 1994.</p> <p>24 Q So based on that, I want to talk to you --</p> <p>25 first of all, would each of the mines, the Italian and</p>	<p style="text-align: right;">128</p> <p>1 A Just diaper changes.</p> <p>2 Q And have you done an air sampling on diaper</p> <p>3 changes before?</p> <p>4 MR. DUBIN: Your Honor, objection.</p> <p>5 THE COURT: Sidebar.</p> <p>6 (Sidebar.)</p> <p>7 THE COURT: What's the basis of the</p> <p>8 objection?</p> <p>9 MR. DUBIN: They said they weren't using the</p> <p>10 diapering study, moved against it in limine and they</p> <p>11 said they weren't using the diapering study. Now</p> <p>12 they're asking about the diaper study. Why do we have</p> <p>13 to do this kind of stuff?</p> <p>14 MS. COOPER: And, your Honor, I'm not -- I'm</p> <p>15 asking has he ever done it. I'm going to ask him is it</p> <p>16 a dusty process. That's simply as far as I was</p> <p>17 intending on going.</p> <p>18 MR. DUBIN: You're trying to bolster his</p> <p>19 credibility and knowledge with a study that you said</p> <p>20 you're not using in this case.</p> <p>21 THE COURT: You indicated you were not going</p> <p>22 to use that.</p> <p>23 MS. COOPER: We're not using diaper data</p> <p>24 because they don't have diapering data. The fact that</p> <p>25 he's done diapering studies, I mean --</p>
<p style="text-align: right;">127</p> <p>1 the Vermont, we talked about how you found positive</p> <p>2 samples, so I want to talk about the exposure that you</p> <p>3 know of for Mr. Rimondi through these years that you've</p> <p>4 testified.</p> <p>5 So, first of all, can you tell me what</p> <p>6 exposure activities that you considered?</p> <p>7 A I considered the exposures from six months to six</p> <p>8 years when the aunt was changing Mr. Rimondi's diapers</p> <p>9 and also giving him a bath every day.</p> <p>10 Q So it's your understanding that he was born</p> <p>11 in 1960?</p> <p>12 A In September of 1960. That's correct.</p> <p>13 Q So that would be 1960 to 1966. And what was</p> <p>14 his exposure levels at that time?</p> <p>15 A Well, we did numbers of applications.</p> <p>16 Q Okay.</p> <p>17 A And each time the diaper was changed there is the</p> <p>18 application of talcum powder, Johnson's Baby Powder,</p> <p>19 each time he was given a bath, and she testified that</p> <p>20 she would, anywhere from, depending on the years,</p> <p>21 around four or five diaper changes a day. So I used</p> <p>22 3.5 diaper changes a day times 365 days times, two</p> <p>23 years, and that gives you 2,555 separate applications</p> <p>24 of Johnson's Baby Powder.</p> <p>25 Q So this is just diaper changes?</p>	<p style="text-align: right;">129</p> <p>1 THE COURT: Then how can he cross-examine on</p> <p>2 that? I mean, you've now told this jury that -- you</p> <p>3 asked him whether he did a diapering study. He said he</p> <p>4 did. You indicated you're not using it. So what is</p> <p>5 counsel to do with that?</p> <p>6 MS. COOPER: Okay, your Honor. I will</p> <p>7 withdraw the question.</p> <p>8 THE COURT: Thank you.</p> <p>9 (Sidebar ends.)</p> <p>10 THE COURT: Objection sustained.</p> <p>11 BY MS. COOPER:</p> <p>12 Q So you calculated the number of diaper</p> <p>13 changes. What else did you calculate between 1960 and</p> <p>14 1966?</p> <p>15 A Also one bath a day from the age of six months to</p> <p>16 the ages of six years.</p> <p>17 Q So one bath a day --</p> <p>18 A Times 365 days a year. And I used a conservative</p> <p>19 five years.</p> <p>20 Q And what does that equal?</p> <p>21 A That gives you 1,825 applications.</p> <p>22 Q Using my cheat sheet, make sure I get this</p> <p>23 right. So that's baths.</p> <p>24 All right. What happened after 1966?</p> <p>25 A Starting in 1967 to approximately 1975, he started</p>

130	132
<p>1 self applying the Johnson Baby Powder after baths or 2 showers. 3 Q All right. So this would be, how many baths 4 was it between 1967 and 1975? 5 A He was only taking one bath a day. So it's one 6 day sometimes 365 days, and during that period it was 7 eight years. 8 Q And what does that equal? 9 A 2,920 applications. 10 Q And did that pattern change, I guess, in 11 1975? 12 A Mr. Rimondi testified in about 1976 he started 13 taking two baths a day. Sometimes three. 14 Q And -- 15 A Depending on what he was doing. 16 Q And do you know when he stopped using, I 17 guess, Johnson & Johnson Baby Powder? 18 A In 2010. 19 Q And at that time he was using -- doing two 20 baths a day? 21 A Well, he said sometimes three. I used two baths, 22 two showers; one in the morning and one at night before 23 he went to bed. 24 Q And do you remember why he would bathe? 25 A Sometimes the heat. Sometimes he worked out.</p>	<p>1 Q And what did their data use as the amount of 2 grams? 3 A For female, the amount was, heavy user, meaning 4 almost full body, was 15 grams per application. And 5 for a test subject that was a male for heavy 6 application, the amount was 23.3 grams -- 7 Q Okay. 8 A -- per instance. 9 Q Did you use that? Did you use that as a 10 point of calculation? 11 A I used the 15 grams and then used that throughout 12 his history. 13 Q Why did you do that? 14 A I wanted to be conservative, instead of breaking 15 it down during the diapering and the first years is to 16 use that across the board, and not use the 23.3 to try 17 to be conservative. 18 Q So you said you used 15 grams? 19 A Correct. 20 Q So if we estimate about 15 grams per 21 application, how much is that? How many grams? 22 A If you multiply that, 32,120, and you multiply 23 that by 15 grams, that would give you 481,800 grams of 24 talcum powder that was dispensed over that time period. 25 Q Do you know how many bottles that would be?</p>
131	133
<p>1 Sometimes he just said it made him feel good to do that 2 before he went to bed. So he did it for 34 years. 3 Q And that brings that to 24,820. So -- 4 A I actually have 25,550. 5 Q I actually have a calculator. 6 A Did that work better? 7 MS. COOPER: Your Honor, may I approach? 8 THE COURT: Sure. 9 A I can do that. 10 Q You have one. Perfect. 11 A You're correct. 24,820. 12 Q So keep your calculator out because I'm 13 actually going to ask you to add these applications up, 14 get us our total application number. 15 A Okay. Total applications of Johnson Baby Powder 16 would be 32,120 times during the period it was either 17 used on him by his aunt or self application for 49 18 years. 19 Q Do you know how much, based on reviewing 20 Johnson & Johnson's internal records, do you know how 21 much an average application would be? 22 A Average would range between four and eight grams 23 per application. But then there's studies they did for 24 heavy users, which Mr. Rimondi would be in that 25 category.</p>	<p>1 A Well, you convert it to ounces, so if you take 2 4,000 -- 481,800 grams, and there's approximately 28 3 grams in an ounce, so you divide that by 28. That will 4 give you 17,207 ounces. 5 Q Say that number one more time. 6 A 17,207 ounces. 7 Q How do we calculate that into bottles? 8 A Well, the son testified that the size of the 9 Johnson's Baby Powder that he would routinely see is 10 about the size of a Gatorade bottle. If you look at 11 the bottles of Johnson & Johnson, that comes pretty 12 close to a 14-ounce bottle. 13 Q Smaller than this one. This is 22. 14 A Correct. 15 Q So if we use the smaller bottle, the 14-ounce 16 bottle, how many bottles would that be? 17 A 1,229 bottles. 18 Q Now, with this amount of exposure and based 19 on your studies of the amount of asbestos in the 20 product, would you say that's a substantial exposure? 21 A Yes. 22 Q And you talked a little bit about the 23 different kinds of testing, one of which was air 24 sampling, right? Have you done air sampling studies? 25 A We have.</p>

<p style="text-align: right;">134</p> <p>1 Q And have you found that, first that talcum 2 powder is a dusty -- a dusty product? 3 A It is. 4 Q And is asbestos in the product in such a way 5 that you can breathe it? 6 A Yes, it is. It's all fine powder so it's nothing 7 binding in with the talc, not like a product that has 8 asbestos added to it where it's a mixture of other 9 materials. This is a very small particulate that 10 easily gets airborne. 11 Q So we might have seen pictures of, say, pills 12 and olive oil and deodorant that has talc in it. If 13 it's not in breathable form, is the asbestos or the 14 talc that has asbestos in it, could that be dangerous? 15 A I don't talk about danger or health effects of 16 asbestos. On the other hand, I talk about what is the 17 potential to inhale asbestos fibers or measurements of 18 asbestos fibers in product where you're wearing air 19 samples and you can make a measurement. 20 The material is dusty. You're shaking it 21 out, it gets up into the environment, and you're going 22 to be inhaling or breathing the talc. You can see it. 23 Talk about it being dusty, Mr. Rimondi talked about it 24 being dusty, getting up in the air. And even when you 25 can't see it, you can smell it because of the fragrance</p>	<p style="text-align: right;">136</p> <p>1 you're going to find the asbestos? 2 A You have to have the highest analytical 3 sensitivity possible to get an idea of can you detect 4 asbestos or not. Using poor analytical sensitivity 5 will not allow you to do that. 6 Q And can we agree that all of the opinions 7 given today were, are within a reasonable degree of 8 scientific certainty? 9 A Yes. 10 MS. COOPER: Your Honor, at this time I pass 11 the witness. 12 THE COURT: Thank you. 13 Any time you're ready, counsel. 14 MR. DUBIN: Yep. 15 CROSS-EXAMINATION BY MR. DUBIN: 16 Q Hi, Dr. Longo. How are you? 17 A Fine. Good afternoon. 18 Q Good afternoon. 19 All right. So I want to walk through your 20 opinions and hopefully give the jury a little bit more 21 of an understanding of what's going on here. 22 First, I think you've already explained that 23 at some point you were given a number of bottles of 24 Johnson & Johnson products to analyze by a few 25 different law firms, right?</p>
<p style="text-align: right;">135</p> <p>1 that is adhered to the talc particles. 2 Q Dr. Longo, we talked about the idea of detect 3 and non-detect. Is there a way to guarantee that talc 4 is free of asbestos with the current available methods? 5 A No. You can only go to your detection limit. 6 Q So if a company wants to guarantee that their 7 baby powder does not have, it is completely free of 8 asbestos, what should they do? 9 A The only solution is not sell it with cosmetic 10 talc. 11 Q Do you know if Johnson & Johnson sells 12 cornstarch baby powder? 13 A They do. 14 Q Have you ever heard of asbestos being in 15 cornstarch baby powder? 16 A No. 17 Q Dr. Longo, we've gotten to the end of our 18 road. I wanted to ask you just finally, if you want to 19 find asbestos, first, do you think it's important to 20 use the best tests? 21 A Yes. 22 Q Do you think it's important to use the most 23 sensitive tests? 24 A Yes. 25 Q Do you think that that is the only way that</p>	<p style="text-align: right;">137</p> <p>1 A That is correct. 2 Q It was three different law firms, one of 3 which was the Lanier firm, correct? 4 A Yes, sir. 5 Q And what did they ask you to look for? 6 A They asked me to see if it had asbestos in it. 7 Q That's not quite right, right? They asked 8 you to look for amphibole. That's what they asked you 9 to look for? 10 A That's possible. I don't recall that, but that's 11 possible. 12 Q Let's look at some of your testimony. 13 (Handing.) 14 A Thank you. 15 Q I'll let you read it first before attempting 16 to impeach or anything. Give you an opportunity. Look 17 at page 53 of your testimony in the Herford case, line 18 6 through 11. 19 A I'm sorry. What was that page again? 20 Q I'm sorry. Page 53. 21 A Thank you. 22 MR. DUBIN: I'm sorry, your Honor. I have 23 one for you, too. 24 Here you go. (Handing.) 25 THE COURT: Thank you.</p>

35 (Pages 134 to 137)

<p style="text-align: right;">138</p> <p>1 BY MR. DUBIN:</p> <p>2 Q So when you were hired by those plaintiffs'</p> <p>3 law firms to look at the Johnson & Johnson product,</p> <p>4 what did they ask you to look for?</p> <p>5 A Specifically asked to determine if Johnson &</p> <p>6 Johnson cosmetic talc contains detectable amount of</p> <p>7 amphiboles.</p> <p>8 Q Right. So the question wasn't asbestos. It</p> <p>9 was look for amphiboles, right?</p> <p>10 A That's what I stated.</p> <p>11 Q And I want to start there, we'll come back to</p> <p>12 that in a second because I want to talk about a</p> <p>13 different type of asbestos and asbestos that's not</p> <p>14 amphibole and just orient us, if we could put up slide</p> <p>15 5.</p> <p>16 So I've written up here what is asbestos, and</p> <p>17 we're going to talk a lot about that today. But you</p> <p>18 recognize these various terms that I have up here under</p> <p>19 what is asbestos, right?</p> <p>20 A I do.</p> <p>21 Q The one I want to focus on first is the only</p> <p>22 one of the asbestos types that is not an amphibole and</p> <p>23 that is chrysotile. That's something you're familiar</p> <p>24 with, right?</p> <p>25 A I am.</p>	<p style="text-align: right;">140</p> <p>1 Q But now, for example, you've done some PLM</p> <p>2 work without concentration on Johnson & Johnson</p> <p>3 products, right?</p> <p>4 A That is correct.</p> <p>5 Q So no bias in that against finding</p> <p>6 chrysotile, right?</p> <p>7 A Yes, sir. There is some.</p> <p>8 Q Okay. Because there may be a thin fiber?</p> <p>9 A Yes, sir. It's harder to see chrysotile by PLM at</p> <p>10 these concentrations.</p> <p>11 Q But certainly you no longer have the issue of</p> <p>12 heavy density separation, right?</p> <p>13 A That is correct.</p> <p>14 Q And you still didn't find chrysotile, right?</p> <p>15 A No. We haven't seen it.</p> <p>16 Q And with respect to TEM work, you said there</p> <p>17 are some limitations for looking at, for chrysotile,</p> <p>18 with PLM; you could, if you wanted to, do TEM work</p> <p>19 without concentration to see if there's any chrysotile</p> <p>20 that you can find in any Johnson & Johnson products,</p> <p>21 right?</p> <p>22 A Within the limitations of the detection limit,</p> <p>23 that's correct.</p> <p>24 Q And you have simply chosen not to do that</p> <p>25 analysis?</p>
<p style="text-align: right;">139</p> <p>1 Q And so based on what we -- we've talked ad</p> <p>2 nauseam, I know you don't know, you were sitting out in</p> <p>3 the hall, we were talking ad nauseam about people who</p> <p>4 claimed to find chrysotile in Johnson & Johnson such as</p> <p>5 Dr. Lewin, some people at Bowling Green, et cetera.</p> <p>6 But that wasn't even something that when these lawyers</p> <p>7 originally approached you even asked you to look for in</p> <p>8 Johnson & Johnson products, right?</p> <p>9 A According to that testimony, that's correct.</p> <p>10 Q And, in fact, you've analyzed now, I think</p> <p>11 you said somewhere on the order of 100 bottles of</p> <p>12 Johnson & Johnson products and you have never reported</p> <p>13 finding any chrysotile in any of them, right?</p> <p>14 A That is correct.</p> <p>15 Q And I think one of your initial explanations</p> <p>16 for that is that you used, particularly when you were</p> <p>17 starting out, this heavy density liquid separation</p> <p>18 method, sometimes you referred to it as the Blount</p> <p>19 method, right?</p> <p>20 A Yes.</p> <p>21 Q And you've said that one of the bad things</p> <p>22 about the Blount method, I guess one of its drawbacks</p> <p>23 is that it sort of prohibits you from finding</p> <p>24 chrysotile, right?</p> <p>25 A Correct.</p>	<p style="text-align: right;">141</p> <p>1 A That's correct. Not yet.</p> <p>2 Q So to be clear, when we see documents,</p> <p>3 plaintiffs have presented documents that chrysotile is</p> <p>4 in Johnson & Johnson, you, the expert, as the expert</p> <p>5 coming to testify for them, have not done TEM work</p> <p>6 without concentration in order to check whether</p> <p>7 chrysotile is really in this product, right?</p> <p>8 A That is correct.</p> <p>9 Q So let's now talk about amphiboles. And if</p> <p>10 we go to slide 7, I blocked those out a little bit.</p> <p>11 So now I've separated out the amphibole types</p> <p>12 from the -- chrysotile is a serpentine mineral, right?</p> <p>13 A That is correct.</p> <p>14 Q And amphibole, the word amphibole does not</p> <p>15 mean asbestos, correct?</p> <p>16 A Does not.</p> <p>17 Q And you'll see here that for some of the</p> <p>18 amphiboles, the amphibole asbestos types are listed on</p> <p>19 the left. For some of the amphiboles there are special</p> <p>20 names when the amphibole occurs in its asbestos-form,</p> <p>21 correct?</p> <p>22 A Correct.</p> <p>23 Q So like riebeckite is the non-asbestos</p> <p>24 version of crocidolite, just as an example?</p> <p>25 A That is correct.</p>

<p style="text-align: right;">142</p> <p>1 Q However, when you get down to some of them,</p> <p>2 like tremolite, the way they're typically distinguished</p> <p>3 in various regulations is by calling the non-asbestos</p> <p>4 one just tremolite, and then calling the asbestos one</p> <p>5 tremolite asbestos, correct?</p> <p>6 A That's correct in some cases, but not all cases.</p> <p>7 Q Well, we'll look at the cases in which it is</p> <p>8 correct. The word tremolite does not mean asbestos,</p> <p>9 correct?</p> <p>10 A If it is a cleavage fragment, that's correct.</p> <p>11 Q The word tremolite does not automatically</p> <p>12 mean asbestos, correct?</p> <p>13 A If it's a cleavage fragment it is not asbestos.</p> <p>14 Q Okay. The word anthophyllite does not mean</p> <p>15 it has to be asbestos, right?</p> <p>16 A No. If it's a cleavage fragment it can be called</p> <p>17 anthophyllite, but also anthophyllite is called it as</p> <p>18 asbestos, too.</p> <p>19 Q We're looking right here, and we could look</p> <p>20 at this and all the regulations if you don't want to</p> <p>21 agree with me on it. There are asbestos types of</p> <p>22 anthophyllite and non-asbestos types of anthophyllite?</p> <p>23 A I absolutely agree.</p> <p>24 Q There are asbestos types of tremolite, there</p> <p>25 are non-asbestos types of tremolite, correct?</p>	<p style="text-align: right;">144</p> <p>1 version of it because it's easier to see. All right.</p> <p>2 I can go to the Elmo.</p> <p>3 All right. That's why I don't usually use</p> <p>4 the Elmo.</p> <p>5 This has, in this EPA regulation, basically</p> <p>6 exactly what we were just talking about, right? Has</p> <p>7 the -- focus -- list of amphiboles, I'll do it in</p> <p>8 another document, too. It has the list of asbestiform</p> <p>9 amphiboles and then non-EPA amphiboles exactly like we</p> <p>10 were discussing; tremolite, actinolite, anthophyllite</p> <p>11 all have non-asbestos forms, correct?</p> <p>12 A Correct.</p> <p>13 Q And that same regulation has various</p> <p>14 definitions -- has a definition of what asbestos is,</p> <p>15 correct?</p> <p>16 A Yes.</p> <p>17 Q And if we look at slide 12, slide 12, that is</p> <p>18 the definition by the EPA of what asbestos is. It has</p> <p>19 to be the asbestiform varieties of the minerals that we</p> <p>20 talked about before, including tremolite and</p> <p>21 actinolite, right?</p> <p>22 A That's what it states.</p> <p>23 Q And if we look at slide 13, I think you</p> <p>24 mentioned this before, it has a definition of</p> <p>25 asbestiform that talks about the mineral fibrosity in</p>
<p style="text-align: right;">143</p> <p>1 A I agree with that, too.</p> <p>2 Q Okay. And to give an example, I know you've</p> <p>3 seen this image before, slide 8, one of the terms, I</p> <p>4 think you used the term today massive form. Sometimes</p> <p>5 it can be called common tremolite, massive tremolite,</p> <p>6 non-asbestos form tremolite. That's where we're</p> <p>7 talking about the non-asbestos tremolite, right?</p> <p>8 A Yes, sir.</p> <p>9 Q Then there's asbestiform tremolite, correct?</p> <p>10 A That is correct.</p> <p>11 Q You talked about various health definitions</p> <p>12 of asbestos and I want to look at a few of what the</p> <p>13 definitions actually are. So let's start with the EPA.</p> <p>14 The EPA is the Environmental Protection Agency,</p> <p>15 correct?</p> <p>16 A That is correct.</p> <p>17 Q And you would agree with me, it is a</p> <p>18 health-based organization, correct?</p> <p>19 A I would agree.</p> <p>20 Q And plaintiffs marked already an EPA</p> <p>21 regulation called the AHERA regulation, and that was</p> <p>22 Plaintiff's Exhibit 936. I want to look at that a</p> <p>23 little bit more closely.</p> <p>24 So if we go to page 80 of it, blow up that</p> <p>25 table, I can barely see it myself here, we'll use our</p>	<p style="text-align: right;">145</p> <p>1 which fibers and fibrils possess high tensile strength</p> <p>2 and flexibility, right?</p> <p>3 A That's what it states.</p> <p>4 Q And those are properties that certain types</p> <p>5 of minerals have because they grow in an asbestiform</p> <p>6 habit, right?</p> <p>7 A Yes, sir. They're fibers.</p> <p>8 Q Well, they grow as fibers. That's how the</p> <p>9 minerals are formed, correct?</p> <p>10 A Correct. The geometrical shape of it.</p> <p>11 Q And OSHA, OSHA is an agency responsible for</p> <p>12 workplace safety and health, correct?</p> <p>13 A Yes, it is.</p> <p>14 Q And if we go to slide 14, OSHA also makes a</p> <p>15 distinction between asbestos amphiboles and</p> <p>16 non-asbestos amphiboles, right?</p> <p>17 A It does.</p> <p>18 Q And they only regulate the ones that are the</p> <p>19 asbestos forms; for example, tremolite asbestos as</p> <p>20 opposed to just tremolite, right?</p> <p>21 A That's what they state.</p> <p>22 Q They specifically do not regulate</p> <p>23 non-asbestiform amphiboles?</p> <p>24 A That's what OSHA states.</p> <p>25 Q And they provide a little bit more detail</p>

<p style="text-align: right;">146</p> <p>1 about this, too. If we go to slide 15, OSHA makes</p> <p>2 clear that for purposes of this regulation -- let's</p> <p>3 talk for a second about what I mean by this regulation.</p> <p>4 OSHA has regulations regulating the use and</p> <p>5 exposures to asbestos in the workplace, right?</p> <p>6 A That is correct.</p> <p>7 Q And those regulations are intended presumably</p> <p>8 to help protect workers, correct?</p> <p>9 A I would assume so.</p> <p>10 Q And OSHA says, "For purposes of this</p> <p>11 regulation, the mineral must be one of the six minerals</p> <p>12 covered and must be in the asbestos growth habit."</p> <p>13 Correct?</p> <p>14 A That is correct.</p> <p>15 Q Now I want to talk about cleavage fragments</p> <p>16 so we really know what we're -- what terms we're using</p> <p>17 here. But we have a short video here that I showed in</p> <p>18 opening, if you show slide 16, to explain what a</p> <p>19 cleavage fragment is.</p> <p>20 This is somebody just breaking apart calcite.</p> <p>21 It's not an amphibole mineral. But you can see</p> <p>22 obviously, and I think you'll agree, that you can take</p> <p>23 a non-asbestos mineral and you can break it up into</p> <p>24 pieces, right?</p> <p>25 A Yes, sir.</p>	<p style="text-align: right;">148</p> <p>1 asbestos, right?</p> <p>2 A That is correct.</p> <p>3 Q But as we can see, some of the pieces, when</p> <p>4 you break them up, may be long and thin, right?</p> <p>5 They'll break in all sorts of different shapes and</p> <p>6 sizes, right?</p> <p>7 A Yes.</p> <p>8 Q And you've agreed, I believe, that long, thin</p> <p>9 cleavage fragments can resemble asbestos fibers, right?</p> <p>10 A That's correct.</p> <p>11 Q And so I want to talk about really then what</p> <p>12 is going on here, and let's start with looking at slide</p> <p>13 60. Let's say I have done exactly what I just did,</p> <p>14 break up tremolite, non-asbestos tremolite, and it just</p> <p>15 so happens to break into a piece of this size and</p> <p>16 shape. It's over five microns long. It has more than</p> <p>17 a 5-to-1 aspect ratio, and that's length to width. You</p> <p>18 will call that asbestos?</p> <p>19 A Not me. No. I would call it as the regulated</p> <p>20 asbestos per the counting rules.</p> <p>21 Q Okay. If you saw that piece you would write</p> <p>22 down in your report asbestos when you were saying what</p> <p>23 that was, correct?</p> <p>24 A Following the counting rules, that's correct. If</p> <p>25 it looked just like that, yes.</p>
<p style="text-align: right;">147</p> <p>1 Q And because of the nature of these minerals,</p> <p>2 they may break along what are called cleavage plains,</p> <p>3 correct?</p> <p>4 A Correct.</p> <p>5 Q So if I go back to slide 8, now let's say I</p> <p>6 take the rock on the right, the non-asbestos rock.</p> <p>7 Okay? We're going to start there. And now I'm going</p> <p>8 to go to slide 17. I can take that non-asbestos rock</p> <p>9 and I can start to break it up with, for example, a</p> <p>10 hammer, right? You could do that?</p> <p>11 A You could. Yes.</p> <p>12 Q And if you look at slide 18, you'll start to</p> <p>13 get all sorts of different shapes and sizes as they</p> <p>14 break along cleavage plains, correct?</p> <p>15 A Yes.</p> <p>16 Q And you cannot -- something like this, for</p> <p>17 example, this process of grinding or breaking things</p> <p>18 up, if you have a milling process or you're producing,</p> <p>19 let's say, a talcum powder product, that could also</p> <p>20 result in trace amounts of tremolite, non-asbestos</p> <p>21 tremolite being broken up, right?</p> <p>22 A That's correct.</p> <p>23 Q But there is not some form of magical</p> <p>24 transformation. You can't take pieces of the</p> <p>25 non-asbestos rock and break it up and then call it</p>	<p style="text-align: right;">149</p> <p>1 Q Even though we already just established that</p> <p>2 if that is from a cleavage fragment it's not really</p> <p>3 asbestos, right?</p> <p>4 A If it is actually from a cleavage fragment or it</p> <p>5 actually is asbestos, because you don't start with</p> <p>6 pounding a rock and then knowing what you have. You're</p> <p>7 looking at what the sample is, how it came. So if</p> <p>8 you're looking at a single fiber like this and you</p> <p>9 follow the counting rules by EPA, by OSHA, by ISO, you</p> <p>10 would report that as asbestos.</p> <p>11 Q This is an important issue and I appreciate</p> <p>12 you listening to my question and trying to respond</p> <p>13 directly to me. Okay?</p> <p>14 That structure comes from breaking apart</p> <p>15 non-asbestos tremolite. You would agree with me that</p> <p>16 it's not magically become, in fact, asbestos, right?</p> <p>17 A Yes, sir. I've already agreed to that.</p> <p>18 Q Okay. But you would count it and report it</p> <p>19 in your reports as asbestos, correct?</p> <p>20 A If your hypothetical is true, that is correct.</p> <p>21 Q So I want to talk a little bit about then</p> <p>22 sort of these counting rules and what they really mean;</p> <p>23 do they mean that something is actually asbestos.</p> <p>24 Let's start by talking first about a type of</p> <p>25 microscopy that we haven't mentioned -- well, actually</p>

<p style="text-align: right;">150</p> <p>1 it was shown and not discussed, and that's phase</p> <p>2 contrast microscopy. Can you tell the jury a little</p> <p>3 bit about that?</p> <p>4 A It's an optical microscope and it has a green</p> <p>5 filter that changes the phase slightly of the direction</p> <p>6 of the light so that it gives you a little bit better</p> <p>7 resolution. It's an air sample collected on an air</p> <p>8 filter. And for phase contrast microscopy, which is</p> <p>9 the method that OSHA recommends to determine the amount</p> <p>10 of fibers in the air that NIOSH, National Institutes of</p> <p>11 Occupational Safety and Health uses, and it has a, you</p> <p>12 analyze it at a magnification of 430 times. If you</p> <p>13 have a fiber parallel sides, it's greater than .25</p> <p>14 micrometers in width, greater than five micrometers in</p> <p>15 length, and has an aspect ratio greater than or equal</p> <p>16 to 3, not 5-to-1, but 3-to-1, you count it as a fiber.</p> <p>17 Q Okay. And so phase contrast microscopy is</p> <p>18 used, for example, by OSHA as part of regulating</p> <p>19 asbestos in the workplace, right?</p> <p>20 A It is.</p> <p>21 Q And what are some of the drawbacks of phase</p> <p>22 contrast microscopy in terms of fiber identification?</p> <p>23 A You cannot determine what the fiber is. You</p> <p>24 can't -- it only tells you you have a fiber. It's not</p> <p>25 designed and cannot identify asbestos. It only says</p>	<p style="text-align: right;">152</p> <p>1 A Not really, because fiberglass is so big, it's</p> <p>2 man-made fiber. You can get silica, just silica</p> <p>3 fibers, but fiberglass is typically not one of them.</p> <p>4 It looks completely different.</p> <p>5 Q Okay. So, but those other fibers that you</p> <p>6 mentioned, let's say again talc, they might meet the</p> <p>7 counting criteria for asbestos that was set out by OSHA</p> <p>8 for the workplace, right?</p> <p>9 A Yes, sir.</p> <p>10 Q But they are not asbestos?</p> <p>11 A If you're measuring non-asbestos fibers, no, they</p> <p>12 will not be asbestos.</p> <p>13 Q So the fact that something satisfies or hits</p> <p>14 a counting criteria for asbestos does not make it</p> <p>15 asbestos, correct?</p> <p>16 A It's correct for that technique, but it is not</p> <p>17 correct for the other techniques that actually identify</p> <p>18 the fiber like transmission electron microscopy.</p> <p>19 You're sort of taking the definitions of an orange and</p> <p>20 comparing it to apples.</p> <p>21 Q Okay. Well, if I counted again one of those</p> <p>22 other fibers under the OSHA scheme meets counting</p> <p>23 rules, that doesn't mean that you, Dr. Longo, conclude</p> <p>24 it's asbestos, right?</p> <p>25 A No. I would not. I would use transmission</p>
<p style="text-align: right;">151</p> <p>1 count this and report it as fiber per cc.</p> <p>2 Q And so what sorts of things could be counted</p> <p>3 as positive as asbestos under a phase -- under phase --</p> <p>4 let me start that over.</p> <p>5 What sorts of things other than asbestos</p> <p>6 could be counted as asbestos under OSHA's counting</p> <p>7 rules that use phase contrast microscopy?</p> <p>8 A Anything that is fibrous but you don't just say</p> <p>9 it's asbestos. Usually phase contrast microscopy is</p> <p>10 used in conjunction where they're using asbestos</p> <p>11 products, asbestos added products. So OSHA allows you</p> <p>12 to make the assumption, since it's an</p> <p>13 asbestos-containing product, you can call it asbestos</p> <p>14 fibers. You're not required to go any further than</p> <p>15 that.</p> <p>16 Q We'll talk about that in conjunction thing in</p> <p>17 a minute, but I'm just asking you a simpler question</p> <p>18 first. What kind of fibers, assuming you have a basis</p> <p>19 to use that OSHA fiber counting in a workplace, what</p> <p>20 types of fibers other than asbestos could be counted as</p> <p>21 asbestos under that technique?</p> <p>22 A Fibrous talc, fibrous antigorite, fibrous</p> <p>23 sepiolite; any fibrous material that meets that</p> <p>24 definition.</p> <p>25 Q Fiberglass?</p>	<p style="text-align: right;">153</p> <p>1 electron microscopy that goes in conjunction with that</p> <p>2 method to verify it's asbestos. I would never ever</p> <p>3 take phase contrast microscopy without having any</p> <p>4 knowledge of what's being sampled and call it asbestos.</p> <p>5 That is inappropriate.</p> <p>6 Q We'll talk about your TEM method in a second.</p> <p>7 To close this one out, to give the jury a sense of what</p> <p>8 you mean when you say something is countable or</p> <p>9 regulated, you actually have to look at the regulations</p> <p>10 and not just the counting criteria, right?</p> <p>11 A No. You're comparing phase contrast microscopy</p> <p>12 with TEM. The regulations in those protocols say if it</p> <p>13 meets these definitions, and of course, you're also</p> <p>14 getting the chemistry of the fiber, you're also getting</p> <p>15 the crystalline pattern of the fiber, and it tells you</p> <p>16 in there you will be calling it asbestos to the TEM</p> <p>17 counting rules. You can't take phase contrast</p> <p>18 microscopy and go over and say this is what happens in</p> <p>19 TEM. That's not applicable.</p> <p>20 Q Let's explain -- I think you actually said</p> <p>21 this yourself earlier, which is in OSHA you're dealing</p> <p>22 with a situation where they've already established that</p> <p>23 there are asbestos products being used in the</p> <p>24 workplace, right?</p> <p>25 A If they're using it for that, yes.</p>

<p style="text-align: right;">154</p> <p>1 Q And that's the context in which those</p> <p>2 counting rules exist; the context of that regulation,</p> <p>3 right?</p> <p>4 A That was the main thrust of that regulation</p> <p>5 initially.</p> <p>6 Q So I want to talk then about the context of</p> <p>7 the counting rules that you use. And, for example, you</p> <p>8 talked about using AHERA counting rules, right?</p> <p>9 A Yes.</p> <p>10 Q EPA AHERA?</p> <p>11 A That's correct.</p> <p>12 Q So what does the AHERA statute focus on?</p> <p>13 What does it focus on?</p> <p>14 A It focuses on a lot of things, from maintenance of</p> <p>15 the building to removal to -- are you talking about</p> <p>16 just TEM or --</p> <p>17 Q I'm talking about the regulation as a whole</p> <p>18 focuses on school remediation, right?</p> <p>19 A Yes, sir.</p> <p>20 Q So to put in context where you're getting</p> <p>21 your counting rules that are defining what's asbestos</p> <p>22 in your reports, let's look at slide 61, the counting</p> <p>23 rules you use are part of a method for using TEM to</p> <p>24 determine completion of a remediation in a school,</p> <p>25 right?</p>	<p style="text-align: right;">156</p> <p>1 A For that specific job, yes. But again, it's the</p> <p>2 same counting rules with all the TEM methods, and all</p> <p>3 those other TEM methods don't say anything about</p> <p>4 schools.</p> <p>5 Q But like you said earlier, where in OSHA, in</p> <p>6 a workplace, you can -- you already know there's</p> <p>7 asbestos there, OSHA allows you to make an assumption</p> <p>8 that what you're finding in the air is asbestos, right?</p> <p>9 A Yes. Since the method cannot identify asbestos,</p> <p>10 that is correct.</p> <p>11 Q And there are actually other EPA methods that</p> <p>12 have to do with building materials that contain a lot</p> <p>13 more definition about how you might go about trying to</p> <p>14 distinguish between asbestos and non-asbestos</p> <p>15 amphiboles, right?</p> <p>16 A That's correct for polarized light microscopy,</p> <p>17 yes.</p> <p>18 Q And, in fact, the AHERA statute requires you</p> <p>19 to first look at these materials through polarized</p> <p>20 light microscopy?</p> <p>21 A That's not correct.</p> <p>22 Q Well, it's not worth arguing about either.</p> <p>23 But let's look --</p> <p>24 MS. COOPER: Objection, your Honor.</p> <p>25 THE COURT: Objection sustained. Counsel,</p>
<p style="text-align: right;">155</p> <p>1 A That is correct.</p> <p>2 Q So before those counting rules ever come into</p> <p>3 play, you've had an analysis that has found already in</p> <p>4 that school asbestos-containing materials, right?</p> <p>5 A If it is analyzed, that's correct.</p> <p>6 Q And asbestos-containing materials in that</p> <p>7 regulation means that they're over, what, one percent</p> <p>8 asbestos?</p> <p>9 A Yes, sir.</p> <p>10 Q So you're typically talking about an</p> <p>11 environment in which you know that there are -- you</p> <p>12 already know that there are commercial asbestos</p> <p>13 products, right?</p> <p>14 A If they have tested it or if they have just made</p> <p>15 the assumption it's there.</p> <p>16 Q Then you have a remediation, if necessary,</p> <p>17 right?</p> <p>18 A Yes.</p> <p>19 Q And now you're testing in that known asbestos</p> <p>20 environment, you're looking in the air to see whether</p> <p>21 or not there is still asbestos there or whether you can</p> <p>22 let the kids go back in the school, right?</p> <p>23 A Correct.</p> <p>24 Q And that's the context in which those</p> <p>25 counting criteria appear in AHERA?</p>	<p style="text-align: right;">157</p> <p>1 avoid the arguments.</p> <p>2 BY MR. DUBIN:</p> <p>3 Q Let's look at that. You're familiar with EPA</p> <p>4 R93, right?</p> <p>5 A I am.</p> <p>6 Q And if we look at slide 63, at least for</p> <p>7 light microscopy, these are some of the features that</p> <p>8 the EPA has indicated may help you tell whether what</p> <p>9 you're looking at is either asbestos or a non-asbestos</p> <p>10 material, right?</p> <p>11 A Yes.</p> <p>12 Q So mean aspect ratio is ranging from 20-to-1</p> <p>13 to 100-to-1, and that's simply how long and thin it is,</p> <p>14 or higher for fibers longer than five microns, right?</p> <p>15 A That's what it states.</p> <p>16 Q Very thin fibrils, that's an individual unit</p> <p>17 of asbestos usually less than .5 micrometers in width,</p> <p>18 right?</p> <p>19 A Correct.</p> <p>20 Q And then some other features such as parallel</p> <p>21 fibers occurring in bundles, fiber bundles displaying</p> <p>22 splayed ends, matted masses of curved individual fibers</p> <p>23 and fibers showing curvature, right?</p> <p>24 A Yes.</p> <p>25 Q So it's not, at least in this regulation it's</p>

<p style="text-align: right;">158</p> <p>1 not just about do I see a structure that is over 5.5 2 microns in length and greater than 5-to-1 aspect ratio, 3 right? 4 A Well, no. It would not have that. This is 5 polarized light microscopy. You're trying to compare 6 this to the counting rules for transmission electron 7 microscopy. That's two different things. 8 Q You didn't apply these criteria to your 9 polarized light microscopy, right? 10 A Yes, we did. Everything that we have reported in 11 our polarized light microscopy, because we use the ISO 12 22262-1, the mean aspect ratio of the individual fibers 13 in the bundles all were greater than 20-to-1. Some of 14 them were over 100-to-1. We had some 200-to-1, 15 300-to-1. In bundles. 16 So yes, they're all greater than five 17 micrometers in length. The smallest bundle we found, I 18 think, was 40 to 50 micrometers in length. So as with 19 the EPA, the R93, now this is not the ISO method that 20 we used, but it meets a lot of these criteria. It's 21 not TEM. 22 Q We'll see when we get to your data whether 23 that's correct. 24 Additionally, the other counting criteria 25 that you use is the ISO?</p>	<p style="text-align: right;">160</p> <p>1 scale. These definitions have nothing to do with the 2 actual analysis. 3 Q Okay. Let's look at one more and then I'll 4 ask you that question again. Go to slide 24. And so 5 it also says, "Asbestos, group of silicate minerals 6 belonging in the serpentine and amphibole groups which 7 have crystallized in the asbestiform habit causing them 8 to be easily separated into long, thin, flexible, 9 strong fibers when crushed or processed." Right? 10 That's also in that method? 11 A Correct. 12 Q And as I understand your testimony then, the 13 definitions of asbestos in the methods that you 14 personally use, you say, have nothing to do with 15 whether something is actually asbestos or not? 16 A No. You're kind of mixing it up a little. We 17 were talking about the general definition of 18 asbestiform. This is now talking about asbestos. 19 Crystallized in asbestiform habit, yes. What we 20 determine it is crystallized, it is crystal; and 21 asbestiform means fibrous if you go to the just 22 geological definition. 23 They can be separated in what we find in the 24 long, thin -- well, flexible. Tremolite anthophyllite 25 asbestos is not flexible. And strong fibers when</p>
<p style="text-align: right;">159</p> <p>1 A Yes. 2 Q And if we go to slide 22, that criteria also 3 says that for amphibole to be asbestos it has to be 4 amphibole in the asbestiform habit, right? 5 A Yes, sir. 6 Q And that criteria also says, if we go to 7 slide 23, to be asbestiform it has to be a specific 8 type of mineral fibrosity in which the fibers and 9 fibrils possess high tensile strength and flexibility, 10 right? 11 A That's what it states. 12 Q They're trying to again distinguish between 13 asbestiform amphibole and non-asbestiform amphibole 14 here, right? 15 A No. This is an overall geological definition. It 16 has nothing to do with the actual analysis. 17 Q Nothing to do with the actual analysis 18 because you're saying you're going to rely on the 19 counting criteria? 20 A No. It doesn't have anything to do with the 21 actual analysis because there's no way to determine 22 what high tensile strength is in the analysis. It 23 doesn't even tell you what high tensile strength means, 24 100 PSI, 1,000 PSI. It doesn't tell you how to measure 25 the flexibility because you can't on a microscopic</p>	<p style="text-align: right;">161</p> <p>1 crushed or processed. Again, what's strong mean? 2 Q Okay. What I'm saying to you very clearly is 3 that you don't make an effort beyond just saying what I 4 found is over .5 microns in length and is greater than 5 a 5-to-1 aspect ratio, you don't make any effort to 6 determine whether or not it meets the definitions of 7 how ISO considers -- what ISO considers asbestos to be? 8 A That's not true. We determined that it was 9 crystalline. You can't have something crystalline in a 10 non-crystalline habit. It doesn't work. There's no 11 science behind it. 12 Q We're going to be here for a while. You said 13 you -- 14 MS. COOPER: Objection, your Honor. I think 15 the witness should be able to finish the answer. 16 MR. DUBIN: He did -- 17 THE COURT: Stop. 18 MR. DUBIN: Sorry. 19 A That's fine. We can move along. 20 Q You said you determined that it was 21 crystalline, right? That's what you said you 22 determined about the structures? 23 A Yes. 24 Q But ISO says crystallized in the asbestiform 25 habit, correct, not just that it --</p>

<p style="text-align: right;">162</p> <p>1 A I guess I should have finished, asbestiform means</p> <p>2 fibrous. Everything that we measured was fibrous. In</p> <p>3 the habit, the crystalline habit is nothing more than a</p> <p>4 geology definition for geometrical shapes. As we</p> <p>5 talked about earlier, the geode, that crystallized in a</p> <p>6 crystalline habit, but in this case it's not fibrous or</p> <p>7 dendritic or massive. That's all crystallized in a</p> <p>8 crystalline habit. That's the general definition.</p> <p>9 Q Let's see how this plays out in the actual</p> <p>10 context of your reports.</p> <p>11 A Yes, sir.</p> <p>12 Q See whether you're actually doing that.</p> <p>13 Let's go to slide 19, to back up for a</p> <p>14 second. So as we said, there were some initial reports</p> <p>15 from April of, I think August and March that related to</p> <p>16 an initial set of 32 samples, right?</p> <p>17 A That's correct.</p> <p>18 Q And I think you said that the reason you</p> <p>19 tested 32 samples up to the March 2018 report is</p> <p>20 because that was what was sent to you, correct?</p> <p>21 A That is correct.</p> <p>22 Q And actually, to be fair, the testimony</p> <p>23 should have been that there were 31 sent to you and one</p> <p>24 bottle that you purchased off the shelf, right?</p> <p>25 A That is correct.</p>	<p style="text-align: right;">164</p> <p>1 A We do through the actual written portion of it.</p> <p>2 But the backup data we have in individual notebooks</p> <p>3 that you can usually go to. I don't put it together</p> <p>4 like that.</p> <p>5 MR. HYNES: Dr. Longo, here's your March 11,</p> <p>6 2018, report and this is the November 14, 2018, report</p> <p>7 with pagination.</p> <p>8 THE WITNESS: Thank you.</p> <p>9 MR. HYNES: You're welcome.</p> <p>10 BY MR. DUBIN:</p> <p>11 Q So, if you could turn, I'll cull up a page</p> <p>12 out of your March 11, 2018, report, page 450. For us</p> <p>13 it's D-11031.</p> <p>14 And so, for example, this is an image that</p> <p>15 you had in your March report, correct? We discussed</p> <p>16 this image a while back, right?</p> <p>17 A We did.</p> <p>18 Q And one of the things I think you even</p> <p>19 admitted today is that when you see a single fiber like</p> <p>20 that, you cannot tell whether it is asbestiform, right?</p> <p>21 A In a vacuum like we talked about, that's correct.</p> <p>22 Q Okay. And yet, as we pointed out earlier,</p> <p>23 despite the fact that you cannot make that</p> <p>24 determination, you called this asbestos in your report,</p> <p>25 right?</p>
<p style="text-align: right;">163</p> <p>1 Q And we're going to talk about that</p> <p>2 off-the-shelf bottle later.</p> <p>3 You didn't talk about these results much</p> <p>4 today so I'm not going to go into them in depth, but a</p> <p>5 lot of -- these samples came from predominantly from</p> <p>6 lawyers for plaintiffs in asbestos litigation, right?</p> <p>7 A That is correct.</p> <p>8 Q Many of them were purchased, for example, off</p> <p>9 of eBay, right?</p> <p>10 A Two-thirds of them.</p> <p>11 Q And as of the time of these initial reports,</p> <p>12 there were two things that were sort of different than</p> <p>13 your analysis in the more recent ones. First, at that</p> <p>14 point in time, you were only using TEM and not PLM for</p> <p>15 your analysis?</p> <p>16 A That's correct.</p> <p>17 Q And one of the reasons I think you said at</p> <p>18 that time is you said that basically PLM wasn't going</p> <p>19 to work, right?</p> <p>20 A That's correct.</p> <p>21 Q And another thing I want to talk about how</p> <p>22 you were handling this asbestiform issue and the like</p> <p>23 back then. And what I've done to just try to make this</p> <p>24 a little easier is you don't add page numbers to</p> <p>25 your -- page numbers to your reports, huh?</p>	<p style="text-align: right;">165</p> <p>1 A That is correct. It meets the definition of the</p> <p>2 counting rules by TEM.</p> <p>3 Q And one of the things that we then see, now I</p> <p>4 want to talk about your current report, slide -- we go</p> <p>5 to slide 26. So now you're looking at 54, what we call</p> <p>6 museum bottles, right?</p> <p>7 A Yes, sir.</p> <p>8 Q And what we're going to see here is, we've</p> <p>9 already said that one of the characteristics of</p> <p>10 something that's really asbestiform can be bundle</p> <p>11 formation, right?</p> <p>12 A Yes, sir.</p> <p>13 Q Okay. And therefore, whether you identify</p> <p>14 something as a bundle or as a single fiber when you're</p> <p>15 looking at a sample can be important, right?</p> <p>16 A Not for the counting rules, no. It tells you to,</p> <p>17 it has two or three or more touching fibers, we just</p> <p>18 follow the counting rules. So it's not important, I</p> <p>19 understand the debate on it for asbestiform or</p> <p>20 non-asbestiform.</p> <p>21 Q Well, one of the things we know is after</p> <p>22 having been questioned a lot about, well, how can you</p> <p>23 tell these individual fibers are asbestiform when we're</p> <p>24 talking about your old reports, in your new reports,</p> <p>25 museum reports, you call a lot more stuff bundles,</p>

<p style="text-align: right;">166</p> <p>1 right?</p> <p>2 A No. We call, if they are bundles we call them</p> <p>3 bundles. Now, there is more bundles in the population</p> <p>4 we looked at in the museum samples than there were in</p> <p>5 the earlier ones. That is correct.</p> <p>6 Q Well, to compare, if we go to slide 27, for</p> <p>7 example, now in your museum report, I believe to avoid</p> <p>8 this whole asbestiform debate, you now call 93 percent</p> <p>9 of what you're finding bundles. Do you call 93 percent</p> <p>10 of bundles what you're finding in your museum report?</p> <p>11 A The way the question was asked, I'd have to say no</p> <p>12 and yes.</p> <p>13 Q Well, let me then rephrase it to see if we</p> <p>14 can just get a yes.</p> <p>15 You call about 93 percent of what you find in</p> <p>16 your museum report bundles, right?</p> <p>17 A That's correct.</p> <p>18 Q And to give you some examples, I just marked</p> <p>19 this separately so you can have them, 11029 A, and</p> <p>20 10 -- I'm sorry, 11031 A, so you have separately some</p> <p>21 images we're going to talk about. They'll all be in</p> <p>22 your reports, and I'll give you the page cites to make</p> <p>23 it easier for counsel to follow along. And I'll give</p> <p>24 Dr. Longo a copy to make it easier.</p> <p>25 Just so we can see the comparison of some</p>	<p style="text-align: right;">168</p> <p>1 right?</p> <p>2 A Yes, sir. That's what the microscopist stated.</p> <p>3 Q And another reason this distinction can be</p> <p>4 important sometimes is if we look at your November 14,</p> <p>5 2018, report at 340, so that would be out of D-11029,</p> <p>6 sometimes you'll find structures that are simply just</p> <p>7 too wide to be individual asbestos fibers, right?</p> <p>8 A That's correct.</p> <p>9 Q Okay. And so if this isn't a bundle, then it</p> <p>10 would have to be a cleavage fragment, right?</p> <p>11 A For tremolite?</p> <p>12 Q Yes.</p> <p>13 A Those fibers do not get that big, but it is a</p> <p>14 bundle.</p> <p>15 Q Okay. So you call it a bundle and then call</p> <p>16 it asbestos, right?</p> <p>17 A Even if it was too wide, it would still be called</p> <p>18 asbestos, but that is a bundle.</p> <p>19 Q Okay. So it would be called asbestos by you</p> <p>20 even though if it was that wide it would be a cleavage</p> <p>21 fragment?</p> <p>22 A It's not by me. It's the health and safety</p> <p>23 counting rules for these types of structures. But that</p> <p>24 is a bundle.</p> <p>25 Q Okay. And I think your suggestion is that, I</p>
<p style="text-align: right;">167</p> <p>1 things in the old reports you were going to call single</p> <p>2 fibers and now bundles. I showed this slide in</p> <p>3 opening, slide 28. And you'll see these images in what</p> <p>4 I handed to you before, just to verify them. On the</p> <p>5 left, that's from your 3/11/2018 report at page 634,</p> <p>6 and you called that image a single fiber, correct?</p> <p>7 A That's what it states, yes.</p> <p>8 Q Okay. And on the right, that's now from your</p> <p>9 November 14, 2018, report, and now you're calling it,</p> <p>10 that structure, different structure, but you're calling</p> <p>11 that thing a fiber bundle, right?</p> <p>12 A Yes. That's the microscopist who called that.</p> <p>13 Q Okay. And I also showed in the opening slide</p> <p>14 29. So in your old reports, the March 11, 2018,</p> <p>15 report, you called that structure on the left a single</p> <p>16 fiber, right, correct?</p> <p>17 A That's what's in the report, yes.</p> <p>18 Q Okay. In the right, now we're in your</p> <p>19 November 14, 2018, report, on the right you're going to</p> <p>20 call that a fiber bundle, right?</p> <p>21 A Yes, sir.</p> <p>22 Q Another example, slide 30; on the left you're</p> <p>23 going to call that, you called that March 11, 2018,</p> <p>24 that was termed a single fiber, and now on the right,</p> <p>25 November 14, 2018, you're calling that a fiber bundle,</p>	<p style="text-align: right;">169</p> <p>1 guess, it sounds like your suggestion is that somehow</p> <p>2 you're just calling it objectively whether these are</p> <p>3 bundles or fibers. Is that what you're suggesting?</p> <p>4 A I mean, a human does do it, but the human sitting</p> <p>5 at the microscope, where you're looking at it and</p> <p>6 you're putting the binoculars in place and you're</p> <p>7 looking at it 200,000 times and you can focus through</p> <p>8 it, it's their decision to do that.</p> <p>9 Q Let's talk about their decision versus --</p> <p>10 let's first start with, okay, you're saying people</p> <p>11 making this call. Those are your analysts working at</p> <p>12 your lab, right?</p> <p>13 A Yes, sir.</p> <p>14 Q And actually, I know this wasn't the purpose</p> <p>15 of the test, but a little while before you produced</p> <p>16 your report on the museum samples you actually did a</p> <p>17 little test inside MAS of your analysts where they</p> <p>18 looked at the exact same material, same grid squares,</p> <p>19 and they wrote down, among other things, whether they</p> <p>20 thought something was a fiber or a bundle or the like,</p> <p>21 right?</p> <p>22 A Yes. As you pointed out, that wasn't what the</p> <p>23 verification was, but that's what they did.</p> <p>24 Q And that was called the MAS TEM Coefficient</p> <p>25 of Variation for Tremolite Anthophyllite in Talc:</p>

<p style="text-align: right;">170</p> <p>1 Quality Control Study?</p> <p>2 A Yes, sir.</p> <p>3 Q This is marked as DD-261 -- I'm sorry,</p> <p>4 D-11038. Just for demonstrative purposes.</p> <p>5 MS. COOPER: For demonstrative purposes, your</p> <p>6 Honor.</p> <p>7 THE COURT: What's the marking on that?</p> <p>8 MR. DUBIN: It is D-11038.</p> <p>9 THE COURT: Thank you.</p> <p>10 BY MR. DUBIN:</p> <p>11 Q So one of the things, again, these are your</p> <p>12 analysts looking at the exact same stuff not for</p> <p>13 purposes of the Johnson & Johnson litigation report</p> <p>14 that we're going to talk about, but trying to figure</p> <p>15 out consistency among the analysts, right?</p> <p>16 A It's a little bit more than that. A consistency</p> <p>17 on, if they look at the exact same opening, do they</p> <p>18 count the same number of asbestos structures, so that</p> <p>19 you can get a coefficient of variation for the error in</p> <p>20 the counting the number of structures from one opening</p> <p>21 to the next. That's what it was designed for.</p> <p>22 Q And so we know what the results were in that</p> <p>23 context, if you look at slide 32. Okay. So these were</p> <p>24 various analysts putting down whether they thought</p> <p>25 something they were looking at was a bundle or a fiber,</p>	<p style="text-align: right;">172</p> <p>1 quadrillions of asbestos fiber bundles, so this is just</p> <p>2 one population. It's not surprising to me.</p> <p>3 Q And even this morning you were asked about a</p> <p>4 couple different -- I've cut the pages out to make it a</p> <p>5 little easier for you. You were asked about a couple</p> <p>6 different images by Miss Cooper. (Handing.)</p> <p>7 THE COURT: For the record, that's what you</p> <p>8 handed to the witness?</p> <p>9 MR. DUBIN: Yes, your Honor, for his ease of</p> <p>10 reference. He's already got those full reports up</p> <p>11 there.</p> <p>12 BY MR. DUBIN:</p> <p>13 Q So, for example, if we look at one of your</p> <p>14 reports, D-11029, at page 999, you were shown this</p> <p>15 image this morning by Miss Cooper and I think you said</p> <p>16 that's a single fiber, right? Right?</p> <p>17 A Yes.</p> <p>18 Q And so if it's a single fiber, again then I</p> <p>19 could say, Dr. Longo, you know that seeing a single</p> <p>20 fiber in isolation on TEM, you can't tell whether</p> <p>21 that's asbestiform, right?</p> <p>22 A In a vacuum, that's correct.</p> <p>23 Q But if you called it a bundle then you can</p> <p>24 say well, a bundle by itself is asbestiform because a</p> <p>25 bundle is asbestos, right?</p>
<p style="text-align: right;">171</p> <p>1 among other information, right?</p> <p>2 A Yes. They did put that down.</p> <p>3 Q And if we click through, we'll see there was</p> <p>4 actually only one time that your analysts, outside the</p> <p>5 context of this, all agreed as to what something was,</p> <p>6 correct?</p> <p>7 A Yes and no.</p> <p>8 Q Okay. Well, there was only one time where</p> <p>9 they all agreed as to whether something was a bundle or</p> <p>10 fiber, right?</p> <p>11 A That would be the yes part. But they all agreed</p> <p>12 that this was tremolite, it came from the standard, and</p> <p>13 that their error of coefficient or counting rate error</p> <p>14 for the number of structures was six percent which is</p> <p>15 pretty good.</p> <p>16 Q But then somehow with slide 27, somehow now</p> <p>17 in the -- go to slide 27 -- but somehow now in the</p> <p>18 litigation report against Johnson & Johnson,</p> <p>19 everybody's pretty much coming up bundles in the museum</p> <p>20 report, right?</p> <p>21 A Well, no. It's not somehow. The analyst is</p> <p>22 making the decision. And in a lot of the photographs</p> <p>23 that we didn't look at are clearly looked like have</p> <p>24 fibers sticking out of it. And yes, it's these many</p> <p>25 fibers, but we're dealing with mines that have</p>	<p style="text-align: right;">173</p> <p>1 A Again, if you have no other information you can,</p> <p>2 yes.</p> <p>3 Q And can you tell us what this thing that you</p> <p>4 called a single fiber was classified as in your</p> <p>5 litigation report against Johnson & Johnson? And I</p> <p>6 think it's on page 990, right?</p> <p>7 A Yes. This verification of Lee Poye's analysis</p> <p>8 states, I think this is number structure 3, it states</p> <p>9 that it's a bundle.</p> <p>10 Q Okay. So this morning when you looked at it,</p> <p>11 you said single fiber. In your report it says bundle,</p> <p>12 right?</p> <p>13 A Well, that's not quite fair. What I said this</p> <p>14 morning is it looks like a fiber, but we're looking at</p> <p>15 it on a picture. You have to really for ones that are</p> <p>16 this close, you can see if I look at it closely now.</p> <p>17 But you really need to be at the TEM.</p> <p>18 And what's interesting about this one, as I</p> <p>19 recall, this had already been analyzed by another</p> <p>20 laboratory and I think we're in almost 90 something</p> <p>21 percent agreement for bundles and fibers.</p> <p>22 MR. DUBIN: I'm going to object to the</p> <p>23 non-responsive portion of that answer. Ask it be</p> <p>24 stricken.</p> <p>25 THE COURT: The jury will not consider that</p>

<p style="text-align: right;">174</p> <p>1 last portion of the testimony. That is stricken from 2 the record. 3 THE WITNESS: I'm sorry, your Honor. 4 THE COURT: Just answer the question being 5 asked, please. 6 BY MR. DUBIN: 7 Q And another example -- may I approach, your 8 Honor? 9 THE COURT: Yes. 10 MR. DUBIN: (Handing.) 11 BY MR. DUBIN: 12 Q The surprise of this is ruined, but if you 13 could cull up just for demonstrative, D-12248, you were 14 asked about this in the deposition recently. Blow up 15 that one right there. You were shown this in a recent 16 deposition and you were asked what is it, right? You 17 recall that? 18 A I do. 19 Q And you said well, definitely asbestiform, I 20 see multiple fibers in the bundles, all that stuff, 21 right? You recall that? 22 A I do. 23 Q And then you were shown what it actually is, 24 correct? 25 A I believe so.</p>	<p style="text-align: right;">176</p> <p>1 A Yes, sir. 2 Q Talk a little bit about testing. 3 First, if we could cull up slide 37, you're 4 familiar with McCrone and McCrone Laboratories, right? 5 A I am. 6 Q So I want to talk a little bit about them 7 because you know that's one of the entities that did 8 testing for asbestos for Johnson & Johnson, right? 9 A I do know that. 10 Q And so we talked a little bit about testing 11 methods this morning and one of the first ones you 12 talked about was the J4-1. If we look at slide 38. 13 So the J4-1 cosmetic industry testing 14 standard, that required the use of XRD and then if XRD 15 is positive, you use PLM, right? 16 A That is correct. 17 Q And you also mentioned some work that you 18 did, if we could show 39, you did work for a company 19 called Scotts at some point, litigation work? 20 A Yes, sir. 21 Q And Scotts, go to slide 40, Scotts testing, a 22 different company, what they did back in the day, the 23 1970s, they did XRD without concentration and PLM 24 without concentration and they did not do any TEM work, 25 right?</p>
<p style="text-align: right;">175</p> <p>1 Q Let's look at that. D-9053. D-9053 for 2 demonstrative purposes only. (Handing.) 3 A Thank you. 4 Q And that sample is actually a sample of 5 non-asbestos tremolite, right? 6 A That's what it states. 7 Q So the one you were calling a bundle of 8 asbestos was actually not asbestos, correct? 9 A I would disagree. 10 Q Okay. It's from a non-asbestos tremolite 11 rock, right? 12 A That's what it states. But I can clearly see the 13 striations in there, so I would disagree with that. 14 Q Okay. So you would disagree with this 15 report. Just to show what it is, go to the first page. 16 This is from the Bureau of Mines, United States 17 Department of the Interior, right? 18 A No, sir. I'm not disagreeing with the document. 19 I think it's a very good document that has a lot of 20 good useful information. I'm just disagreeing on that 21 one structure, in the midst of everything around it is 22 cleavage fragments. I absolutely agree with that. 23 Q We're going to come back to your reports a 24 little bit later, but I'm going to switch gears for a 25 second.</p>	<p style="text-align: right;">177</p> <p>1 A Correct. The labs they used did not do that. 2 Q We know that's not right. They used McCrone. 3 A Correct. But McCrone never told them they should 4 use TEM. 5 Q And one of the things, just talking about, 6 you know, perspective when you're working for a 7 defendant, one of the things you said is that Scotts, 8 it would be unfair to criticize Scotts for not going 9 beyond even just these two methods, XRD and PLM back in 10 the 1970s, right? 11 A That's correct. I stated that. 12 Q And you know that, if we look at slide 41, 13 unlike Scotts and unlike the cosmetic industry at 14 large, Johnson & Johnson did go beyond those two 15 methods to do TEM work, right? 16 A That's correct. 17 Q And I think you said your understanding was 18 it was quarterly testing by TEM? 19 A That's what I thought. 20 Q Okay. You sure about that? 21 A I mean, I don't have the document in front of me. 22 I know they put composites together and by TEM 23 analysis, as I recall, is every three months or every 24 two months. In some cases, sometimes more. 25 Q Okay. Well, we can look at this. It's</p>

<p style="text-align: right;">178</p> <p>1 already in evidence, D-7147. This is talking a little</p> <p>2 bit about some of the testing that Johnson & Johnson</p> <p>3 was doing. And if you go to the second page, for</p> <p>4 example, if you look at the top, it says, "TEM 7024</p> <p>5 biweekly composite samples," right?</p> <p>6 A Correct.</p> <p>7 Q So that's biweekly, not quarterly, right?</p> <p>8 A That's correct.</p> <p>9 Q That was the TEM method we're talking about,</p> <p>10 correct?</p> <p>11 A Yes.</p> <p>12 Q And one of the slides that I put up said that</p> <p>13 you -- let me just ask it this way: You have testified</p> <p>14 before that McCrone was literally the best lab in the</p> <p>15 country at the time back in the 1970s and 1980s, right?</p> <p>16 A Yes, sir. I have testified like that in the past.</p> <p>17 Q And, in fact, you confirmed that McCrone</p> <p>18 would have been a good choice in the 1970s for a</p> <p>19 company to go to to test a product like talc by TEM</p> <p>20 right?</p> <p>21 A Yes, sir.</p> <p>22 Q Walter McCrone himself, you said, was one of</p> <p>23 the best optical microscopists in the world, right?</p> <p>24 A During his time, that is correct.</p> <p>25 Q And we've already seen this document before,</p>	<p style="text-align: right;">180</p> <p>1 McCrone Associates wrote and published a test procedure</p> <p>2 for looking at talc under TEM to determine whether it</p> <p>3 has asbestos or not, right?</p> <p>4 A They had a talc method they published, yes.</p> <p>5 Q In 1990, right?</p> <p>6 A Yes. In microscopy.</p> <p>7 Q And what is that, in the journal called The</p> <p>8 Microscope, right?</p> <p>9 A Yes.</p> <p>10 Q A reputable journal?</p> <p>11 A It's okay. Yes.</p> <p>12 Q And you have called Dr. Millette a great</p> <p>13 scientist, correct?</p> <p>14 A Yes, sir. In this field, I know him for a long</p> <p>15 time, worked with him. He's a good scientist. We</p> <p>16 agree on a lot of things and some things we don't.</p> <p>17 Q He worked for the EPA at its electron</p> <p>18 microscope lab in Ohio for over a decade, right?</p> <p>19 A That is correct.</p> <p>20 Q Written dozens of analytical protocols,</p> <p>21 correct?</p> <p>22 A I don't know about dozens, but he's been on a</p> <p>23 couple.</p> <p>24 Q He was chair of the asbestos subcommittee of</p> <p>25 the ASTM?</p>
<p style="text-align: right;">179</p> <p>1 I'll just call it the slide since it's easier. It's in</p> <p>2 evidence as Defense Exhibit 7216. Can you cull up</p> <p>3 slide 43?</p> <p>4 You have seen this document before with</p> <p>5 McCrone writing, in 1987, that after 15 years of</p> <p>6 looking at Windsor Minerals talc by TEM, it was their</p> <p>7 opinion that it was free of asbestos, right? You have</p> <p>8 seen that before?</p> <p>9 A I have.</p> <p>10 Q Okay. And one of the people cc'd on that</p> <p>11 letter, I want to ask you about, Dr. Jim Millette.</p> <p>12 That's somebody who you know, correct?</p> <p>13 A It is.</p> <p>14 Q And he worked at McCrone at one point,</p> <p>15 correct?</p> <p>16 A Yes, sir. He started in 1986, I believe it was,</p> <p>17 and then worked there until they broke away sometime in</p> <p>18 the '90s.</p> <p>19 Q The jury's already seen that he was not only</p> <p>20 cc'd on this letter but also is on a number of testing</p> <p>21 reports. But I want to talk about another piece of his</p> <p>22 involvement in this story. Let's just go to slide 44</p> <p>23 to make this quicker.</p> <p>24 You're familiar with that at some point</p> <p>25 Dr. Millette, he left McCrone, and Thomas Kremer from</p>	<p style="text-align: right;">181</p> <p>1 A He was.</p> <p>2 Q And what you know to be the fact is if you go</p> <p>3 to slide 45, this J&J TEM method that we've been</p> <p>4 talking about is largely identical just to the</p> <p>5 published method that this person you called a great</p> <p>6 scientist put into the scientific literature, right?</p> <p>7 A Yes, sir.</p> <p>8 Q And there's no, actually nobody from -- no</p> <p>9 Johnson & Johnson author on the McCrone method,</p> <p>10 correct?</p> <p>11 A On the one Jim published, that's correct.</p> <p>12 Q And if we look at slide 46, this feature of</p> <p>13 the J&J TEM method that you were talking about earlier</p> <p>14 or criticizing, this idea that you need to find a</p> <p>15 certain number of minerals for it to be a quantifiable</p> <p>16 level of detection, that was just taken straight out of</p> <p>17 the published method, right?</p> <p>18 A I'm not sure which way it went since that 7024</p> <p>19 method was written before Jim Millette got there, but</p> <p>20 they both have the same thing.</p> <p>21 Q That method wasn't actually before Jim</p> <p>22 Millette was there. There was a different --</p> <p>23 MS. COOPER: Objection, your Honor. May we</p> <p>24 approach?</p> <p>25 THE COURT: Sidebar. Take that down, please.</p>

46 (Pages 178 to 181)

<p style="text-align: right;">182</p> <p>1 (Sidebar.)</p> <p>2 THE COURT: What's the nature of the</p> <p>3 objection?</p> <p>4 MS. COOPER: Attorney testifying. I think</p> <p>5 sidebar comments and arguing with the witness.</p> <p>6 THE COURT: Do you want to lay a foundation</p> <p>7 for this?</p> <p>8 MR. DUBIN: I don't know what she's asking me</p> <p>9 to lay a foundation for, but I guess I can rephrase.</p> <p>10 THE COURT: The conclusion that said he</p> <p>11 wasn't there.</p> <p>12 MR. DUBIN: Sure.</p> <p>13 THE COURT: Okay. After this question we'll</p> <p>14 take the afternoon break.</p> <p>15 MR. DUBIN: Sure.</p> <p>16 THE COURT: Thank you.</p> <p>17 (Sidebar ends.)</p> <p>18 THE COURT: Rephrase, please.</p> <p>19 BY MR. DUBIN:</p> <p>20 Q Do you know that there have been a variety of</p> <p>21 different TEM methods by that name over time at Johnson</p> <p>22 & Johnson?</p> <p>23 A There's been variations of it, yes.</p> <p>24 Q Do you know whether James Millette was at</p> <p>25 McCrone when this limit of quantifiable detection</p>	<p style="text-align: right;">184</p> <p>1 phones are turned off.</p> <p>2 (Sidebar.)</p> <p>3 THE COURT: Do we think we'll finish with</p> <p>4 Dr. Longo today?</p> <p>5 MR. DUBIN: Obviously I'm trying to go</p> <p>6 through some stuff laboriously, I'm trying to do it</p> <p>7 quickly.</p> <p>8 THE COURT: The court is not looking to</p> <p>9 shortcut if you want to.</p> <p>10 MR. DUBIN: I intend, I'm doing everything I</p> <p>11 can to get him done today.</p> <p>12 THE COURT: Okay. And that much on redirect</p> <p>13 so far?</p> <p>14 MS. COOPER: Not long, your Honor. I'm</p> <p>15 trying to get Dr. Longo out.</p> <p>16 THE COURT: I just have to remember in case</p> <p>17 the jurors have questions. Okay. So they can stay if</p> <p>18 they have questions. But if it goes over into</p> <p>19 tomorrow --</p> <p>20 MR. DUBIN: No, no. I know he can't come</p> <p>21 back tomorrow, so I'm doing my best.</p> <p>22 THE COURT: Okay. Let's go.</p> <p>23 (Sidebar ends.)</p> <p>24 THE COURT: Mr. Dubin, you may continue.</p> <p>25 BY MR. DUBIN:</p>
<p style="text-align: right;">183</p> <p>1 became part of the J&J method?</p> <p>2 A I'd have to go back and look at one of the earlier</p> <p>3 ones before Jim got there. If you have it, we can take</p> <p>4 a look at it.</p> <p>5 MR. DUBIN: Okay. We can take a break now.</p> <p>6 THE COURT: Okay. Great.</p> <p>7 Members of the jury, we're going to take the</p> <p>8 afternoon break now. 15 minutes. Leave your notebooks</p> <p>9 here. And remember the instructions I've been</p> <p>10 providing to you during the course of this trial: No</p> <p>11 discussions with regard to any aspect of this case,</p> <p>12 including the testimony that you've heard, and no</p> <p>13 research of any kind whatsoever. Enjoy your break.</p> <p>14 For those of you that inquired, we did bring</p> <p>15 extra notebooks in case you need them today as opposed</p> <p>16 to tomorrow. Thank you. Enjoy your break. Be ready</p> <p>17 to come back up at 25 of. Thanks.</p> <p>18 (Jury exits.)</p> <p>19 THE COURT: You may step down. Thank you.</p> <p>20 THE WITNESS: Thank you, your Honor.</p> <p>21 THE COURT: We're off the record. Thanks.</p> <p>22 (Recess: 3:16 p.m. to 3:37 p.m.)</p> <p>23 COURT OFFICER: Jury's entering.</p> <p>24 (Jury enters.)</p> <p>25 THE COURT: Please be seated. Make sure cell</p>	<p style="text-align: right;">185</p> <p>1 Q Moving right along, Dr. Longo. We're trying</p> <p>2 to get you finished today. I know you have scheduling</p> <p>3 issues.</p> <p>4 So we just left off talking a little bit</p> <p>5 about the J&J TEM methods and whether it actually</p> <p>6 changed over time, right?</p> <p>7 A Yes, sir.</p> <p>8 Q I'm not going to go through them all, but I</p> <p>9 just want to at least show you one. This is Defense</p> <p>10 8019.0001. Any objection?</p> <p>11 MS. COOPER: No objection, your Honor.</p> <p>12 THE COURT: Are you seeking admission at this</p> <p>13 time?</p> <p>14 MR. DUBIN: Yes.</p> <p>15 THE COURT: So admitted. Go ahead.</p> <p>16 BY MR. DUBIN:</p> <p>17 Q Perhaps we'll talk more in depth about this</p> <p>18 some other time, but you'll see as a designation for</p> <p>19 this method, determination of asbestos minerals in</p> <p>20 Windsor 66 talc by a transmission electron microscope,</p> <p>21 right?</p> <p>22 A Yes, sir.</p> <p>23 Q And if you look in the upper right it says,</p> <p>24 "TM 7024 A," right?</p> <p>25 A Correct.</p>

47 (Pages 182 to 185)

<p style="text-align: right;">186</p> <p>1 Q And so this was an earlier, I guess maybe</p> <p>2 they should have changed the darn numbers whenever they</p> <p>3 changed the method, but they didn't. So it's still</p> <p>4 called 7024, but you can see that it looks different</p> <p>5 than the other 7024 we were talking about?</p> <p>6 A Yes, sir.</p> <p>7 Q And, for example, this says 1983, so this</p> <p>8 would have been before Jim Millette went to McCrone?</p> <p>9 A That is correct.</p> <p>10 Q And there is no provision in here about limit</p> <p>11 of quantifiable detection or needing to find a certain</p> <p>12 number of fibers for a positive, right?</p> <p>13 A I don't see it.</p> <p>14 Q You don't see that anywhere in that method,</p> <p>15 right?</p> <p>16 A Not in that document. No, sir.</p> <p>17 Q And then do you know when Jim Millette went</p> <p>18 to McCrone?</p> <p>19 A 1986.</p> <p>20 Q '85 maybe, or around that time? Can we agree</p> <p>21 1985 or 1986?</p> <p>22 A We can agree on that.</p> <p>23 Q Okay. It's nice to reach some harmony.</p> <p>24 So again, going back to my point before,</p> <p>25 slide 46, and I think we can also at least agree that</p>	<p style="text-align: right;">188</p> <p>1 Q And the times you've been asked have been in</p> <p>2 courtrooms or legal proceedings, correct?</p> <p>3 A Yes, sir.</p> <p>4 Q And you actually knew Dr. Millette at the</p> <p>5 time that he published that article, right?</p> <p>6 A 1990, I did.</p> <p>7 Q And I think you've said before that he's</p> <p>8 somebody who you have high regard for as a scientist,</p> <p>9 correct?</p> <p>10 A That's correct.</p> <p>11 Q And this idea of detection limits having</p> <p>12 quantifiable limits of detection, that's not unique to</p> <p>13 that J&J TEM method, right?</p> <p>14 A Yes and no. It's certainly not unique, but at</p> <p>15 that concentration and that number of different types</p> <p>16 of asbestos you'd have to have, that is very unique.</p> <p>17 Q Well, there are a number of Government test</p> <p>18 standards for TEM that incorporate detection limits</p> <p>19 whereby you have to find a certain number of asbestos</p> <p>20 fibers before you get a positive, right?</p> <p>21 A Yes and no.</p> <p>22 Q Let me ask you it this way to be clear: You</p> <p>23 will admit that there are a number of Government test</p> <p>24 standards for TEM that incorporate detection limits</p> <p>25 whereby you have to find a certain number of fibers,</p>
<p style="text-align: right;">187</p> <p>1 the provision of the J&J method that you were looking</p> <p>2 at this morning is something that is in the published</p> <p>3 method that was published in The Microscope journal by</p> <p>4 Dr. Millette and Thomas Kremer, right?</p> <p>5 A Yes, sir.</p> <p>6 Q Okay. And one of the reasons to publish in a</p> <p>7 peer-reviewed literature, although there are a number,</p> <p>8 is so others can comment on the method, your</p> <p>9 conclusions, and provide any criticisms, right?</p> <p>10 A And the use of method if they so choose.</p> <p>11 Q Right. And you know scientists can write in</p> <p>12 and say this method is flawed, it's a bad one, et</p> <p>13 cetera, right?</p> <p>14 A I think so. I'm not sure what the policy is of</p> <p>15 that journal, Microscopy, about letters to the editor.</p> <p>16 Q And you aren't aware of any published</p> <p>17 criticisms of this talc-testing method that Johnson &</p> <p>18 Johnson adopted that appeared in The Microscope around</p> <p>19 this time, right?</p> <p>20 A That's correct.</p> <p>21 Q The only place or time you said recently that</p> <p>22 you've ever criticized this particular talc-testing</p> <p>23 procedure is in a courtroom or some other legal</p> <p>24 proceeding, correct?</p> <p>25 A Where I've been asked. Yes, sir.</p>	<p style="text-align: right;">189</p> <p>1 right?</p> <p>2 A I agree that there is typically two to three</p> <p>3 fibers, but it's not like J&J's or McCrone's where you</p> <p>4 have to find multiple types of asbestos.</p> <p>5 Q Sir, I'm asking a simple question. Give me</p> <p>6 an answer or we can look at a transcript.</p> <p>7 You admit there are a number of Government</p> <p>8 test standards for TEM that incorporate detection</p> <p>9 limits whereby you have to find a certain number of</p> <p>10 fibers. Is that correct or incorrect?</p> <p>11 A That statement like it is is correct.</p> <p>12 Q Okay. Thank you.</p> <p>13 And, in fact, if we look back at slide 2, we</p> <p>14 talked about this earlier, the gentleman on the left is</p> <p>15 George Yamati?</p> <p>16 A Yes, sir.</p> <p>17 Q And did he write a method that indicated you</p> <p>18 had to find a certain number of fibers in a test sample</p> <p>19 to achieve statistical significance?</p> <p>20 A That is correct.</p> <p>21 Q Okay. And that number that he used was 18</p> <p>22 fibers, right?</p> <p>23 A Yes. There's a reason for that, but that's</p> <p>24 correct.</p> <p>25 Q The reason, you've said that before, is</p>

<p style="text-align: right;">190</p> <p>1 because he believed that there might be chrysotile 2 asbestos even in the actual filters they were using, 3 right? 4 A Well, it's more than a belief. That was a problem 5 in the manufacturing for polycarbonate filters. They 6 were pre-contaminated before they got to your lab. 7 Q Okay. Irrespective, he recommended an 18 8 fiber limit for statistical significance, right? 9 A Again, it depended on what was on the background. 10 It was a range depending on what you found. So it 11 wasn't just 18. 12 Q And I think you've agreed before, I think you 13 know where I'm going, but it's important, when 14 evaluating a method, to know what its analytical 15 sensitivity is, right? 16 A Yes, sir. 17 Q And it's also important to know what your 18 detection limit is, right? 19 A Correct. 20 Q And you produced, originally produced your 21 March 11, 2018, report in an electronic format, right? 22 A Yes, sir. 23 Q And you produced them as PDFs, correct? 24 A That's correct. 25 Q I'm not going to belabor this, but -- and</p>	<p style="text-align: right;">192</p> <p>1 First of all, you gave a percentage by PLM, 2 and what was the percentage you were saying of asbestos 3 in the product by PLM? 4 A It ranged from less than .1 percent, and for some 5 of the -- some of the, I believe it was the Asian, I 6 think it was as high as .2 or .1. 7 Q Those numbers are not actually the percentage 8 that you're finding in the products, right? 9 A It's the percentage found in the heavy liquid 10 density portion of it. 11 Q Right. So what you're actually reporting, 12 'cause you admit you made it sound like that was the 13 percentage in the bottle, right? 14 A It's the percentage of what was found on the 15 slide. 16 Q Okay. That's certainly not what you said 17 this morning, right? 18 A I'm not sure. But that's the percentage they 19 found. 20 Q What it really is, is after you do the heavy 21 density liquid separation, you've separated out what 22 you want to separate out, right? 23 A Correct. 24 Q Then you're testing that separated out part 25 and that's the percentage you're talking about?</p>
<p style="text-align: right;">191</p> <p>1 take our time up, as I think you'll agree with me that 2 this is what happens, if we can show slide 48. At some 3 point we discovered something about your electronic 4 reports, and you remember us going through this, right? 5 A I do. 6 Q What happens is that there are certain data 7 in your reports that is whited out electronically, 8 correct? 9 A The detection limit and analytical sensitivity 10 because of the analysis, that's correct. 11 Q So I don't know if this -- so what happened 12 is if you put your cursor over a blank spot in your 13 report and you press delete, this white box that was 14 covering up certain data disappears and you can 15 actually see that there used to be something in the 16 report before you gave it to us, right? 17 A That's correct. 18 Q And that's the information on your reports, 19 detection limits and analytical sensitivities, correct? 20 A That's correct. 21 Q It's much faster to do it that way, right? 22 All right. So I want to talk a little bit 23 about, you skipped some stuff so I'm skipping some 24 stuff, the percentages in the product that you 25 mentioned earlier today.</p>	<p style="text-align: right;">193</p> <p>1 A What was seen on that slide. That's correct. 2 Q Right. So it is not representing, there's no 3 data there that's representing how much asbestos there 4 is in the product in the beginning, right? 5 A Well, not exactly. No. We also have the ISO PLM 6 that's not using heavy liquid and they usually 7 correlate, so the analyst takes that into account. 8 Occasionally you'll have it higher in the Blount, but a 9 lot of the times it's less than .1 percent and it's the 10 same. 11 Q But all of your ISO work that did not involve 12 concentration, if you reported concentration at all, 13 you just report it as below .1 percent, right? 14 A Yes, sir. 15 Q So this .2 percent, .3 percent you were 16 talking about by weight is from PLM that does not 17 relate to a percentage in the product? 18 A I'm just looking through the PLM. 19 THE COURT: For the record, which report are 20 you looking at, Dr. Longo? 21 THE WITNESS: I'm sorry, your Honor. I'm 22 looking at November 14. 23 THE COURT: Thank you. 24 A I think that is true, only in the Asian samples, 25 unless I'm missing something.</p>

<p style="text-align: right;">194</p> <p>1 Q None of the samples relevant to these</p> <p>2 exposures having to do with Italy and Vermont?</p> <p>3 A That's correct.</p> <p>4 Q So again, if somebody comes up and says oh,</p> <p>5 well, Dr. Longo said I found .2 or .3 by weight, by PLM</p> <p>6 in the bottle as opposed to your concentrate, that</p> <p>7 wouldn't be correct, right?</p> <p>8 A If it's just in the concentrate it's probably a</p> <p>9 factor of approximately ten, so instead of less than</p> <p>10 0.1, it's still less than 0.1.</p> <p>11 Q And this morning you mentioned a bunch of</p> <p>12 numbers about how many fibers per gram there were of</p> <p>13 whatever you're calling asbestos in the museum samples.</p> <p>14 You recall discussing the fiber per gram numbers?</p> <p>15 A Yes.</p> <p>16 Q But you actually also have weight percentages</p> <p>17 for your TEM analysis that you didn't discuss this</p> <p>18 morning, right?</p> <p>19 A That is correct.</p> <p>20 Q And if we look at those just basically, slide</p> <p>21 54, at least in the museum samples that you said you</p> <p>22 were relying on for today, the highest concentration</p> <p>23 was around .0092 of a percent, or 9.2 thousandths of a</p> <p>24 percent, right?</p> <p>25 A That is correct.</p>	<p style="text-align: right;">196</p> <p>1 you had received, right?</p> <p>2 A Correct.</p> <p>3 Q You were also deposed in, let's look at slide</p> <p>4 35, put this in time period. You were deposed at some</p> <p>5 point in a case called Wittman?</p> <p>6 Do you recall that at all?</p> <p>7 A No.</p> <p>8 Q Well --</p> <p>9 MS. COOPER: Your Honor, objection. May we</p> <p>10 approach?</p> <p>11 THE COURT: Sure. Take that down, please.</p> <p>12 (Sidebar.)</p> <p>13 MS. COOPER: Your Honor, I am just worried</p> <p>14 about getting into improper impeachment when we haven't</p> <p>15 identified when and where, what deposition. He's just</p> <p>16 said he doesn't even know about this. I just want to</p> <p>17 make sure. But if they're going to first impeach him</p> <p>18 they need to give him some context what we're talking</p> <p>19 about before we show it.</p> <p>20 MR. DUBIN: I haven't started to impeach him</p> <p>21 yet. I am simply putting some dates down to get</p> <p>22 oriented for some questions.</p> <p>23 THE COURT: Nothing that I've heard this far</p> <p>24 has been objectionable. Asking him if he recalls</p> <p>25 testifying in a particular case is not improper. I</p>
<p style="text-align: right;">195</p> <p>1 Q Okay. I want to talk to you about -- I want</p> <p>2 to talk to you about one more issue for now. And let's</p> <p>3 start with slide 34. And I want to talk to you about</p> <p>4 testing of off-the-shelf bottles.</p> <p>5 So to orient ourselves, I think we had</p> <p>6 already talked about this, that in your initial reports</p> <p>7 you tested 31 bottles from plaintiffs' law firms and</p> <p>8 one bottle that MAS purchased off the shelf, right?</p> <p>9 A Yes.</p> <p>10 Q All of the 31 that you received from</p> <p>11 plaintiffs' law firms were not sealed, correct?</p> <p>12 A They were all not sealed.</p> <p>13 Q Right. The only sealed bottle was one that</p> <p>14 you purchased, that you reported on was one that you</p> <p>15 purchased off the shelf, and you did not detect any</p> <p>16 asbestos in that off-the-shelf bottle, right?</p> <p>17 A That is correct.</p> <p>18 Q You said that you had purchased about 15 to</p> <p>19 20 off the shelf, but you didn't test any of the others</p> <p>20 that MAS purchased off the shelf, right?</p> <p>21 A That is correct.</p> <p>22 Q And if we go to slide 19. As I think we</p> <p>23 said, you've testified before that the reason that</p> <p>24 there are 32 bottles discussed up until the March 20,</p> <p>25 '18, report is that those -- that because that's what</p>	<p style="text-align: right;">197</p> <p>1 understand the point. I think counsel is trying to get</p> <p>2 us through this.</p> <p>3 (Sidebar ends.)</p> <p>4 THE COURT: You may continue. Put that back</p> <p>5 up.</p> <p>6 BY MR. DUBIN:</p> <p>7 Q And I'm going to hand you a copy of your</p> <p>8 deposition in case you need to refresh your</p> <p>9 recollection of anything. And one of the things that</p> <p>10 you told us in November of 2017 was that you had not</p> <p>11 done any analysis of any Johnson & Johnson Baby Powder</p> <p>12 or Shower to Shower at that point, other than the</p> <p>13 ones -- 30 that had been in your earlier August report,</p> <p>14 and then you included in your March report, as I said,</p> <p>15 one more Lanier sample and that was from eBay and your</p> <p>16 MAS off-the-shelf bottle, right?</p> <p>17 A I don't recall that, but that's probably correct.</p> <p>18 Q Well, maybe you can just refresh your</p> <p>19 recollection, if you want to read. But I think you</p> <p>20 told us at that time that you hadn't done any TEM</p> <p>21 analysis on any additional J&J samples other than the</p> <p>22 one Lanier sample and the MAS control bottle, right?</p> <p>23 A I don't recall saying that.</p> <p>24 Q Why don't you read your deposition? You can</p> <p>25 just see if it refreshes your recollection. If you</p>

<p style="text-align: right;">198</p> <p>1 look at 85:25 through 86:23. Read it to yourself for</p> <p>2 now.</p> <p>3 A Okay.</p> <p>4 Q So you told us that other than the two</p> <p>5 additional that would end up making 32 by March of</p> <p>6 2018, that at the time of the Wittman deposition in</p> <p>7 November 2017, you hadn't done any TEM analysis on any</p> <p>8 additional J&J samples, right?</p> <p>9 A That's what I must have thought at the time. Yes,</p> <p>10 sir.</p> <p>11 Q That's what you swore to under oath, correct?</p> <p>12 A I believed it, yes.</p> <p>13 Q You believed it. Do you now believe it?</p> <p>14 A It's been a lot of samples.</p> <p>15 Q Well, when you told us the reason there were</p> <p>16 32 in the March 2018 report because that was what you</p> <p>17 had received, that was false testimony, correct?</p> <p>18 A I'm sure that is.</p> <p>19 Q When you told us in Wittman that you had at</p> <p>20 that time in November only looked at the 30 bottles</p> <p>21 plus the two that would go in your March 2018 report,</p> <p>22 that was also false testimony, correct?</p> <p>23 A Again, I don't recall that.</p> <p>24 Q Okay. Let's look at it. (Handing.)</p> <p>25 THE COURT: What have you handed the witness?</p>	<p style="text-align: right;">200</p> <p>1 CERTIFICATION</p> <p>2</p> <p>3 I, ANDREA F. NOCKS, C.S.R., License Number</p> <p>4 30XI00157300, an Certified Court Reporter in and for the</p> <p>5 State of New Jersey, do hereby certify the foregoing to</p> <p>6 be prepared in full compliance with the current</p> <p>7 Transcript Format for Judicial Proceedings and is a true</p> <p>8 and accurate non-compressed transcript to the</p> <p>9 Best of my knowledge and ability.</p> <p>10</p> <p>11</p> <p>12 <%10613,Signature%></p> <p>13 ANDREA F. NOCKS March 5, 2019</p> <p>14 CERTIFIED COURT REPORTER DATE</p> <p>15 MIDDLESEX COUNTY COURTHOUSE</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>
<p style="text-align: right;">199</p> <p>1 MR. DUBIN: I've handed the witness a report</p> <p>2 in another case that he has issued entitled "Analysis</p> <p>3 of Johnson & Johnson Baby Powder, Valeant Shower to</p> <p>4 Shower Talc Products For Amphibole Asbestos," and I</p> <p>5 labeled it D-12 -- 12249.</p> <p>6 THE COURT: Thank you.</p> <p>7 BY MR. DUBIN:</p> <p>8 Q Look at excerpts from that report. I'll hand</p> <p>9 you up the excerpts D-11249 A.</p> <p>10 So we still have the timing let's back up</p> <p>11 again, slide 35. Have you had a chance to look at the</p> <p>12 materials that I provided to you?</p> <p>13 A Yes.</p> <p>14 MR. DUBIN: And for demonstrative purposes,</p> <p>15 D-12249 A.</p> <p>16 MS. COOPER: No objection to demonstrative</p> <p>17 purposes, your Honor.</p> <p>18 THE COURT: Fine.</p> <p>19 (Continuation of the day's proceedings in</p> <p>20 Volume 2.)</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	